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For the Photographer and Kinematographer

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Why I Am a Pictorial Photographer

(Number Sixteen)

WILLIAM S. DAVIS

THE Editor has asked me to tell the readers of PHOTO-ERA MAGAZINE why I am a pictorial photographer. This might be explained most obviously by saying that I regard photography as one of the mediums for pictorial expression—otherwise it would be inconsistent to employ it for such a purpose. However, there is more to be said than this, since those who know of my work in painting, pastel, etching, and block-print making might ask why, with these mediums available, one should add photography to the list? The answer to this hypothetical question is that it has always been a matter of interest to me to try to find out the possibilities of different mediums as vehicles for the expression of personal ideas or emotions, and by personal practice to learn both the scope and limitations of each.

Such study always brings to light the fact that every medium possesses certain qualities peculiar to itself which renders it of especial value for certain purposes. Oil and water-color painting, for example, provide mediums for the unlimited expression of color-harmonies, for a vigorous rendition of solid form or "volume" in a composition, and for the interpretation of luminosity and atmosphere. The characteristic beauty of an etching lies primarily in the line-quality of its technique, which may range from the most delicate tracery, almost as light as air, to bold strokes on the copperplate which print with velvety richness. Such line-work creates an effect so personal in character as to rival the autographic nature of a person's handwriting. Block-printing, lithography, and drawings in various mediums likewise possess their individual qualities, due to the nature of the materials used as well as the manner of employment. So, also, does photography when one is able to make the work of the lens and the chemical reactions obey the will of the user to the extent of producing a planned-for result. To thus utilise the possibilities latent in photography as a medium for pictorial expression naturally introduces the personal equation as an important element, making it essential to use the same ingredient a certain famous painter told an anxious inquirer he mixed his colors with—"Brains, sir!" Hence, the purely machine-like manipulations which cause the uninitiated to regard photography as merely a mechanical recorder must give place to intelligent direction at every step. This becomes apparent as one continues to study pictorial photography.

The fact that the results attained by photographic means differ from those produced through other mediums furnishes a logical reason for employing the camera when it can be made to satisfactorily serve one's requirements. If, however, the finished work is so camouflaged as to imitate superficially the results produced by a different medium, it ceases to possess a distinctive flavor of its own and in consequence loses its artistic *raison d'être*. To me, the outstanding characteristic features of the photographic medium are: its power of rendering the most subtle nuances of tone-gradation; the reproduction of surface-texture and details of the most diverse kinds of objects or materials; the preservation of form in the case of transient effects which, in some instances, exist for but the fraction of a second. When one or more of these features are judiciously utilised as part of a well-composed design, the result is representative of the chosen medium.

CLOUD-SHADOWS C. E. PALMER

Following the Lens in the White Mountains

Part II (*Continued from July issue*)

C. E. PALMER

THE vicinity of the Glen House opposite the mouth of the toll road up Mt. Washington is well known to most who have traveled at all in this region; but the pictorialist is apt to find the material more enticing than satisfactory. The eye can feast on the splendid panorama, but the camera is apt to demand more unity and intimate bits. Probably Mt. Adams is the best bit to be worked from the vicinity of the highway; but with time at one's disposal, some of the finest material in America can be enjoyed by the ascent of Carter Dome, which can be very easily accomplished from this point. There are three possible trails to the top of this Prince of the Hills: the strenuous climb from Carter Notch previously mentioned; the longest trail from the east via Chatham and over the Carter-Moriah Ridge by way of Imp, North and South Carter, etc.—a two-day tramp; and this one from the Glen House. Such a lordly hill is seldom accomplished with so little effort, yet through such really wild country. The Dome's 4,860 feet place it among the highest; its cliffs are among the sheerest, and its views are among the most gorgeous; yet a virtual boulevard can be taken to the top. A long day should be allowed for the climb. The A. M. C. Guide Book easily points the way, which follows the aqueduct from the rear of the Glen House. In about thirty minutes this path joins the famous Nineteen-Mile Brook Trail from Gorham, which, in turn, in about another hour reaches the United States Forestry Trail for the actual ascent up Mt. Hight. This trail is wide and clear, as it was constructed to carry supplies by packhorse to the fire lookout on the Dome. The trail slabs the mountain-side seven times, eventually emerging upon the brow of a gigantic slide from the *col* between Mt. Hight and Carter Dome. One can follow the horse trail over Mt. Hight, but the pictorialist will do better to take the path across the slide, which brings him in sight of the Dome summit. From here the way is as nearly level as a mountain-path ever can be.

At each turn of the trail as it slabs the moun-

tain, views of increasing splendor occur until the climax is reached in traversing the top of the slide. Here indescribable beauty lies to the north and west, and the Northern Peaks are seen marshaled in splendid array. "Cloud Shadows" was made from this location. This spot is at least worth two hours.

Continuing from the slide, and not forgetting to partake of its delicious spring, the trail leads through blown-down and stunted growth, shortly to emerge upon the summit of the Dome and Quebec are seen to the North; Champlain is seen over all the hills of Vermont; Lake Winnepesaukee gleams in the middle distance, and the Berkshires and central hills of Massachusetts are low on the bowl of the horizon. The sea cannot be found, but Moosehead shows a speck of its expanse and Katahdin is just hidden by one of its higher foothills. The entire Presidential Range is here seen to greatest advantage.

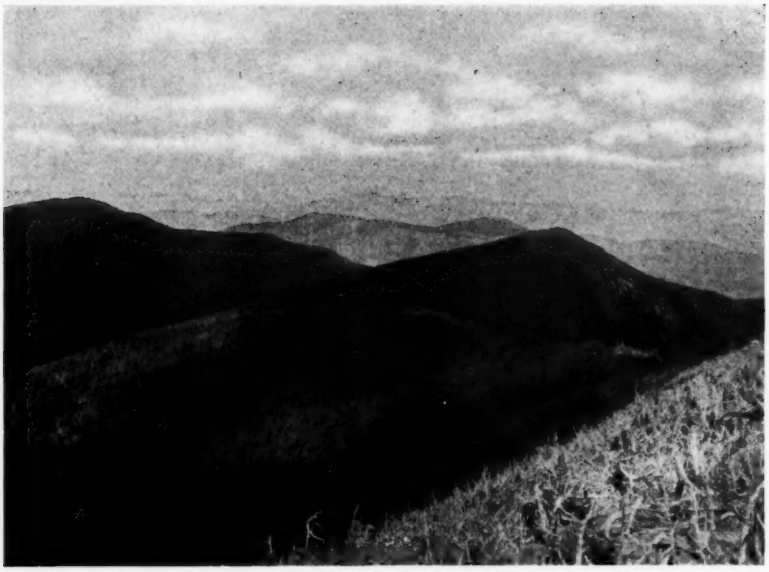
Though the same trail is well worth retracing, one can return by way of the Carter Notch

ARENA OF WINDS C. E. PALMER

an entirely different type of material. Here are mountain-top effects in their wildest and most splendid dress. The knee-high firs allow unobstructed focus in any direction and a bit farther on the burned stumps lie in weird and effective patterns. The "Arena of Winds" and "Burly Shoulders", on this and the following page, are representative of this spot.

The summit of the Dome, with its genial watchman, is a delightful place to linger on a mild day. The views from the tower are probably the finest and the most extensive in New England, and even superior to those from Mt. Washington. Quite the largest portion of New England lies spread before the eye. The Laurentian Hills in Trail down the steep wall into the Notch and thus descend the more strenuous side of the Dome. This path rejoins the Nineteen-Mile Brook Trail, which can be taken back to the point of departure from the Aqueduct Path. We have dwelt more on this bit of the hills, as we believe it the finest of all for picture-material.

While in this region, an afternoon should be spent on the Ravine side of the Presidents. The northern face of these mighty crags is not very effective in the forenoon, with the great ravines filled with dense shadows; but with the sun in the west, the effects are nothing short of stupendous. The road from Bowman to Randolph is a joy from a couple of hours past



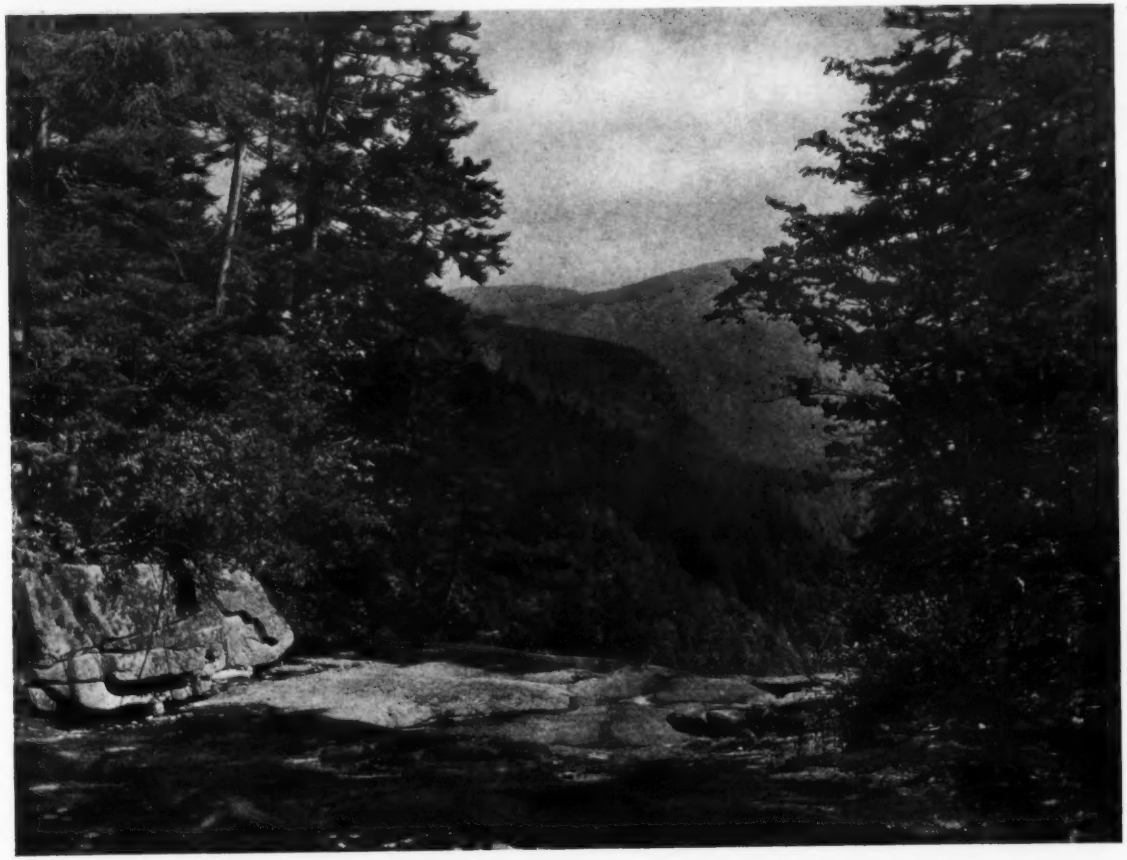
BURLY SHOULDERS C. E. PALMER

noon to sunset, and although the colors reflected from the mountain-sides are more for the brush than the camera, many a masterpiece is possible to the lens. Outside the Rockies, few expanses of bare rock show so colorfully as the northern face of the Presidential Range.

To make our list as inclusive as possible to the inquiring pictorialist we should not pass over the Dixville Mountains to the north. The autoist is undoubtedly more enthusiastic over the Dixville Notch than the picture-hunter. This is easily understood, as the peaks are comparatively low, their configurations exceedingly picturesque, and most all worth viewing can be seen from the roadside. The peculiar rocks, especially when studied across the artificial bowl of Lake Gloriette, are not lacking in some charm, but the material is soon exhausted. The charms of the Dixville region lie in subjects other than mountain effects. The road westward toward Vermont lies through one of the most beautifully rolling expanses of pastoral country in New England, and the camerist here is bound to be attracted more by farm, village, and pasture.

Quite on the other hand, Crawford Notch, to the south of the great hills, sometimes termed something of a "frost" by the too expectant motorist, is another locality of exhaustless material for those with a desire to leave the forest-enclosed road. The greatest reward for least effort lies on the top of Mt. Willard at the head of the Notch. Even the most modest walker is well capable of the forty-five-minute tramp from Crawford Station across the field and up the bridle-path to the summit of this comparatively low knob. This cliff of 2,700 feet elevation affords a breath-taking view down the whole Notch over the Willey House camps and the railroad far below. One glimpse from *here* will convince that Crawford Notch is a world of scenic wonder in itself. Opposite, the formidable cliffs of Webster throw defiance to the world, and northward mighty Washington towers like a breaking wave.

If one is seeking something more strenuous, with correspondingly greater rewards, this part of the Notch affords some of the sportiest climbing in the hills. On the opposite side of the road from the path to Mt. Willard begins the two trails over the Southern Peaks and eventually to Washington's summit. The old Crawford Bridle Path starts from the Crawford House and is a very easy but fairly long hike to Mt. Clinton, from where splendid views over the shoulders of the roof of New England are to be enjoyed. However, this way is uninteresting until the really high ground is reached, being



A SYMPHONY IN HILLS

C. E. PALMER

RESOLUTION SHELTER C. E. PALMER

entirely wooded right up to the 4,270 feet elevation of Mt. Clinton. Once out of the woods, however, the tramper is on real mountain territory, stark and savage, and let no mistake be made of it despite a pleasant day. Ahead over Mt. Pleasant, and beyond, lie miles of bare tundra at an elevation which places it climatically in the Arctic regions. One glance about the entire unprotected elevation and a realisation that the world's recorded maximum wind velocity is held by this ridge, and little is needed to understand why most of the victims of storm in the White Mountains have perished on the trail ahead.

The more enthusiastic picture-hunter will find much more to his liking on the Mt. Webster and Mt. Jackson Trail, which leaves the Notch at the huge boulder that marks the highest point on the road. This is an arduous and sporty climb with real thrills. The trail divides in about an hour of fairly stiff climbing through virgin forest past cascades and beautiful pools. The camerist out for his "money's worth" will take the right fork up Mt. Webster and earn the thrills that await him at the top.

Mt. Webster is awesome when viewed from the Willey House camps on the highway or from the railroad when the train crosses the Frankenstein Trestle; but the reverse from the summit of Webster crags is actually staggering. Nothing in the eastern part of the continent can approach it. While there are greater depths in the Great Gulf, the drop is not so abrupt as from these Webster Cliffs. If one should be so fortunate as to be there when the wind allows the use of a tripod, the results should be superb. Upon the single occasion when we attempted photography from these mighty cliffs, though the day was bright the wind was so strong that we were obliged to brace among the boulders and make the briefest possible exposures, which resulted in too flat negatives. Calmer air, to allow penetration of the constant haze that hangs over the enormous hole, is required for prints suitable for reproduction in half-tone. From Webster the trail traverses comparatively uninteresting stunted growth over Mt. Jackson to Clinton; but there is a surprisingly stiff little climb from Mizpah Springs Shelter to the top of Clinton.

Descending Crawford Notch by the highway several trails will be noted leading off to the right. The one to Ripley Falls just above Willey House Station is well worth while. The falls are too enclosed for satisfactory photography, but they are very beautiful, and the short trail is apt to offer many interesting bits of woodland.

"A Symphony in Hills", previously reproduced, furnishes argument why the pictorialist cannot afford to overlook the trail to Arethusa Falls near Bemis. Bemis is also the point of departure of the well-known Davis Trail to Mt. Washington over Mt. Alban Ridge. This is a comparatively easy, though long, route to the top of New England and is of particular interest to the camerist. The writer has not yet enjoyed the three-day hike along the entire trail; but as far as Resolution Shelter, under the Giant Stairs, we believe it second only to the Carter Dome region. The ascents are very easy, and the summit of Mt. Crawford can easily be made in an hour and a half from Bemis through lovely birch and pine forest and over magnificent ledges. Mt. Crawford allows unobstructed view around the compass, with every major peak in the mountains in full view excepting only the northern summits, which are shut out by Washington's towering bulk. "Mountain Mist",

CONTEMPLATION C. E. PALMER

MOUNTAIN-MIST C. E. PALMER

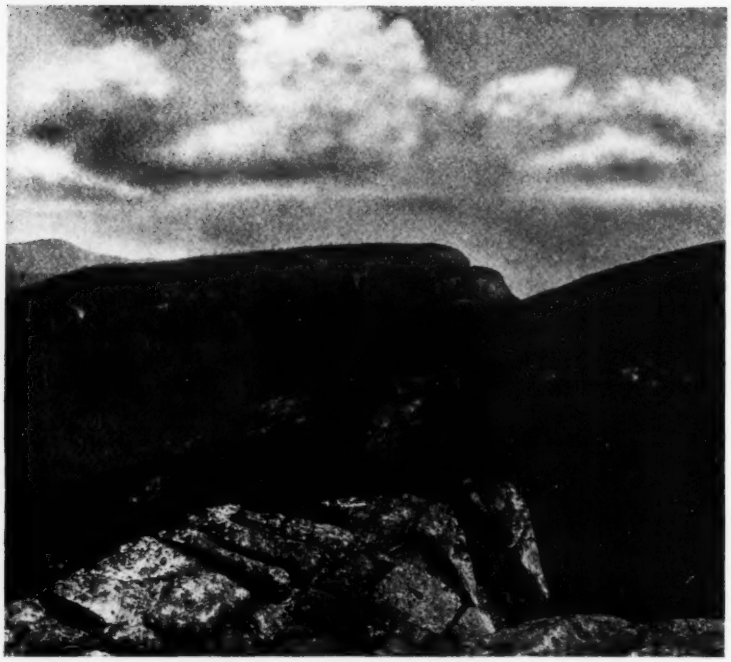
which was made along this beautiful trail gives the view up the Notch, and "In the Halls of Giants" portrays the area under foot to the northeast, including the best possible angle of the beautiful Giant Stairs only two miles away. "Contemplation" is eloquent of the possibilities among the open spaces along the trail to the summit of Mt. Crawford.

Continuing down the Notch to Sawyer Rock Station, where the logging railroad comes in from the right, is found the mountain cart-way to Livermore Village, an almost abandoned lumber village intensely interesting in its squalid contrast to the majestic and beautiful location. Here the pictorialist has the theme of man's manifestation of his ability to do the worst with the divine gifts of Nature. This is the gateway to Carrigan Notch, and Mt. Carrigan one of the mighty hills. We have this area on our list of awaited opportunities; but as the locality has never been artistically handled, that we have knowledge of, we are sure that its isolation and wildness ensure a world of exploration for the pictorialist.

The Intervale among the Conways is famous the world around, and there is scarcely a traveler who has not viewed the beautiful valley and enthusiastically mailed postcards of its scenery; but admitting its loveliness, we think the picture-hunter will desire more virgin fields. Mt. Pequawket, or Kearsarge, to the east, is much loved by the vacationist in the region because of its easy ascent and its beautiful spruce groves; but the pictorialist with limited time will find little to be studied that is not more eloquently represented in other portions of the hills.

Though considered to be among the White Mountains and certainly of easy approach, we do not think of the Franconias as very nearly related to the more northern hills. They somehow lack the intimacy of the Mt. Washington region. Though well provided with trails, there are few shelters, and the hiker has not that sense of friendly security against a sudden turn of weather which he has in the northern hills, where certain shelter is never very far away—except along the Crawford Ridge. Yet tramping should be entirely practical and safe about this range and much material abounds.

Franconia Notch, especially in the vicinity of



IN THE HALLS OF GIANTS C. E. PALMER

Echo Lake and Cannon Mountain, upon the shoulder of which appears the familar "Old Man", has been photographed and painted to a degree rendering the locality not especially attractive to the serious worker. However the higher points of the region seem to have been pictorially neglected and will undoubtedly reward exploration if one can secure a headquarters located centrally enough to allow easy access to the trails; but we believe satisfactory work here must be accomplished by considerable preparation and "packing the trail" for at least a week or more. From our experience, Mt. Lafayette appears to be the exception, and, though we have been rather unfortunate in the way of weather on our single ascent of the mountain, we can enthusiastically vouch for its qualities. Several unfamiliar angles of the "Old Man" are to be found as the trail begins to rise over the rocks of Eagle Cliff. Eagle Pass, between the Cliff and the main shoulder, is the only thing of its kind in these mountains, and the panorama from the outer rim of the central hump is magnificent. Though having little to show for a very cold and snowy ascent, we endorse Lafayette's 5,400 feet as every inch a mountain and eminently worthwhile.

Famed in song and story, espied afar with delight by the returning lover of the hills, most intimate in the hearts of New Englanders, and most beautiful to look upon, despite its comparatively low elevation, Chocorua majestically points with expressive finger to the glories beyond. However, all the glories are not beyond its own domain. This mountain is probably "shot" by more cameras than any other natural feature in Eastern America other than Niagara Falls. But the hackneyed scene is very limited in radius and does not even scratch the possibilities of this entrancing region, for real pictures truly representative of Chocorua are yet to be made. We have seen enough of the mountain to know that they are waiting, and we plan to return with more leisure and get them. The mountain is a pictorial jewel, the trails are easy, and the bulk is so great that a whole summer could easily be spent upon its slopes. The two small prints may give some hint of the lesser known features of this photographic paradise. The summit of this hill affords some of the

CHOCORUA SUMMIT
NORTHEAST BOULDER—MT. CHOCORUA
C. E. PALMER

most fascinating rock studies anywhere in New England.

We beg the indulgence of those who are intimate with other portions of these lovely hills; but as our sole purpose has been to excite interest among discriminating photographers unacquainted with the possibilities of the region and its accessibilities, we have endeavored as briefly as possible to recite impartially what appear to us to be the particular features worthy of first inspection.

We find it quite impossible to close this pair of articles without remarking that the nature-lover and the pictorialist, after gaining a fair idea of this splendid region, will find among his admirations the wonderful work of the several organizations which, with no reward other than their own love of nature and the protection of nature for their fellows, have made the White Mountains so accessible and protected them from spoliation, sometimes at great cost and against powerful odds. The Appalachian Mountain Club, particularly, is worthy of unstinted admiration. The hundreds of miles of well-defined trails, the scores of comfortable shelters and huts, and the constant vigilance of this organisation cause us to rise and call them blessed. "A. M. C.", spied on the most isolated marker, comes as the wave of a friendly hand and the smile of a wise councilor.

Sound-Film Processes

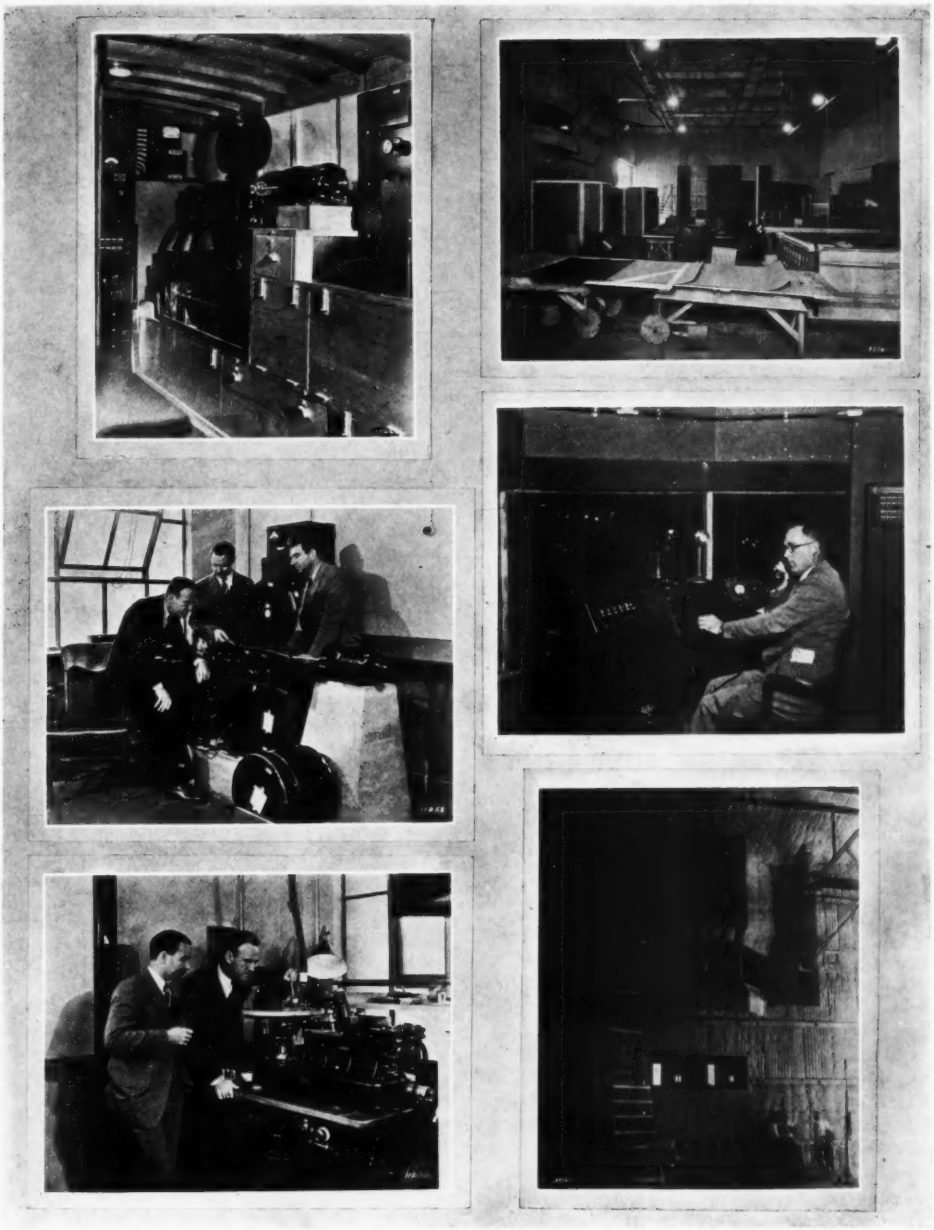
WILLIAM STULL, A.S.C.

THE current vogue of sound-films, or talking pictures, has come so suddenly that the general public is likely to consider them as a new development. That they are not. From the very inception of the two arts of recording and reproducing sound and motion, attempts have been made to join them; but practical commercialisation of the art has been dependent upon the perfection of sound-transmission apparatus and the solution of problems relating to various vital parts of the whole system. Very early it was found that the actual coupling of a phonograph and motion-picture apparatus was not difficult and that well synchronised sound-films were possible. However, the recording apparatus of those days was not sufficiently flexible, and the reproducing apparatus was totally inadequate for even the small theaters of the time. Therefore, the silent kinema continued to evolve to its present highly-developed state. But paralleling this, long-distance and radio-telephony made equally great strides, and from them have come the recent improvements which have made the modern speaking film commercially practicable.

These developments have been not only in amplification and reproduction but in the actual recording-processes, and have evolved two basic types of recording. The first of these is the familiar wax-disc phonograph record, made and played in synchronism with the film. The second, or sound-on-film type, is entirely new, and consists of a *photographic* record of the sound, placed beside the picture and on the same strip of film. Both the recording and reproduction of these two basic types of sound-film is practically the same. Their chief divergence lies in the physical nature of the record, the details of the apparatus, and, to some extent, in the quality of the reproduced sound.

The disc-systems, of which the Vitaphone is the outstanding example, uses any standard kinema camera capable of smooth, silent operation at the relatively high required speed of ninety feet per minute. The recording-disc is generally in another room, and is synchronised with the camera through an electrical interconnection of the driving-motors. The records, usually cut in duplicate, for safety, are practically identical with the ordinary electrically-recorded phonograph record save that they are sixteen inches in diameter, and are recorded at a considerably slower rotational speed, so that they may run the same length of time as the reel of film they are made with—*i.e.*, slightly over eleven minutes. It is possible to "play off" any given scene from one record to another, which gives the process a certain degree of flexibility in editing, or assembling the finished picture. From the final record, to which the film is matched, a metal die is made, from which are pressed the many records distributed to the various theaters throughout the world.

The sound-on-film system is subdivided into two main types, professionally called the *variable density* and the *variable area* types. These terms refer to differences in the form of the record, which will be explained later. They are practically interchangeable, playing equally well



SOUND-FILM EQUIPMENT — WILLIAM STULL, A.S.C.

1. For Location-Work
2. Sound-on-Film Recorder
3. Wax-Disc Recording Machine
4. A Sound-Stage
5. Where Sound is Controlled
6. On a Sound-Stage

on either type of reproducer. They have the advantage of being easier to edit, comprising one unit with the picture-bearing film, and of being self-synchronising in case of film breakage, which is obviously not the case in the disc-processes. They also claim a better quality of tone-reproduction, as they theoretically cover a wider band of sound-vibrational wave-lengths than is possible with the disc-record.

The type of film-record which has so far had the most general distribution is the so-called *variable density*, of which the Movietone is the outstanding example. In this process, a small glow-lamp, built into the camera, shines upon the film through a minute slit, .10″ x .0006″ in size. This glow-lamp—officially called an "Aeo Light"—is maintained at a set level of luminosity by a battery. This current is modulated by the current coming from the microphone, which, in turn, is modulated by the sound-vibrations being recorded. Consequently, the strength of the Aeo-light varies and prints upon the film moving past it a succession of tiny bands of varying density, which, therefore, form a record of the sound picked up by the microphone.

In the *variable area* type, of which the RCA-Photophone and the DeForest Phonofilm are the outstanding exponents, the sound-track, or portion of the film upon which the sound is recorded, is of the same dimensions and location, but the record is produced differently. A small, concentrated-filament lamp is focused on a tiny mirror, which reflects the light to a focal point on the film. This mirror is oscillated by the current from the microphone, making the beam of light on the film oscillate correspondingly, and producing a photographic image consisting of a series of serrated edges, rather like the teeth of a saw, which correspond to the variations of current set up in the microphone by the varying sound-waves.

From the above it will be seen that in both sound-on-film processes, the recording cannot take place at the same point the accompanying "frame", or individual picture is made, where the movement must be intermittent, but rather at some point on the film either above or below, where the film moves continuously. The exact location of this point for some time prevented the interchanging of pictures made by two of these systems, as one firm placed the sound several inches *above* the picture, while the other put their sound *below* the picture. Eventually a standard location about fourteen inches below the picture was agreed upon.

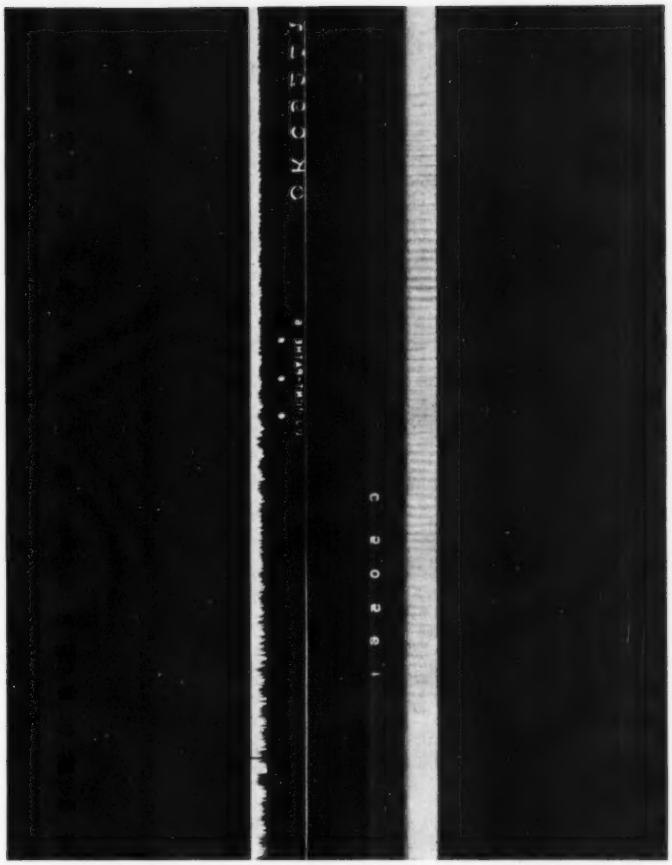
In studio recording it has become generally the practice to have the sound recorded on a separate film, the recorder and camera being driven, as in the disc-process, by synchronous motors. This allows somewhat greater mobility of the cameras, and also permits the use of several cameras, shooting different angles of the same scene, in perfect synchronism with the one sound-record. It also allows more freedom in the laboratory processing of the two films: for over- or underexposure or development of the sound-negative has precisely the effect on the sound that it would have on the visual quality of the picture. Where this practice is followed, the release-prints, of course, have the sound double-printed on them and are quite as though there had been but the one film in the first place.

There are, however, two processes that retain the separate films throughout, namely, the Paramount Corporation's process, developed by Roy Pomeroy, and the Gaumont-Petersen-Poulsen process in Europe. Their greatest advantage seems to be that the standard proportions of the "frame", or picture, are retained, whereas in the other processes the picture is made square, due to the sound-track. The effect of this on composition can be easily imagined and is especially evident in pictures which were made silent and later fitted with a synchronised musical score.

The European Tri-Ergon process uses the standard image-size and proportions, but on a larger film.

In the actual recording, great pains are taken to assure that the apparatus itself is silent and free of vibration. In addition to this, many studios enclose the cameras in large, portable soundproof booths, with glass-fronts to shoot through. In appearance these booths are not unlike large refrigerators on wheels, but their internal temperature quite gives the lie to their looks; in fact, they are much more like Turkish-bath cabinets.

In outdoor recording, it has been found that the acoustic condition of the proverbial great open spaces is perfect for recording. In studio work, the building is thoroughly soundproofed, to exclude all external noise. Then the stage is carefully treated to damp all reverberation; this is just the reverse of the procedure in broadcasting, or making phonograph records, where some resonance is desirable, as the music or speech is intended for reproduction in homes, which are acoustically "dead" rather than in theaters, where there is usually far too much reverberation already. When all is made ready, and the actors are thoroughly rehearsed in their parts, the lights are turned on and burned until all possibility of noise due to their expanding with the heat is past—usually about five minutes—the cameramen are locked in their cabinet,



SOUND-ON-FILM RECORDS WILLIAM STULL, A.S.C.

Right, Variable Density (Movietone); left, Variable Area (RCA-Photophone. Photophone film laterally inverted for better comparison. Note the sharp character of the record—it is a record of gunfire.

the cameras are speeded up and "interlocked" with the recorders, a colored light flashes word that the sound-system is in operation, and the scene is made. From the microphones on the set, the sound travels first through a powerful amplification set, controlled by an engineer called the "mixer", who listens in with a pair of earphones, and then to the recorder. A wax-record is generally made simultaneously, and is "played back" at once, to determine whether or not the scene is satisfactory.

When the film is finally assembled, and sent, completed, to the exhibitor, it has marked upon it a definite starting-point, so that it may be started in proper synchrony. The projector may be of any standard make, so long as it is steady and silent. For the disc-systems, a turntable and pick-up quite similar to those used in the familiar electric phonograph—Panatrope or Electrola—are mounted beside the projector, and driven by the same motor. In the sound-on-film systems, the pick-up unit is placed just above the lower, or take-up magazine. In it is a small lamp, focused through an optical system onto the film, behind which is a potassium photo-electric cell. This is virtually an electric eye, for it is sensitive to variations of light falling upon it, in that it changes its capacity as a conductor of current proportionally to the intensity of light it receives. This variation is passed on through the amplifying system to the reproducing units at the screen. Due to this action of the photo-cell, it is easy to

SOUND-ON-LOCATION WILLIAM STULL, A.S.C.

Fred Niblo, famous director, and John Arnold, cameraman, "baptise" the new portable recording plant for location-work at the Metro-Goldwyn-Mayer studios. Renée Adorée is being filmed and recorded in this scene.

see how both types of sound-on-film processes are interchangeable.

From the pick-up, whichever kind it may be, the sound passes through a battery of vacuum-tube amplifiers, in principle very like those in a radio set, but vastly more powerful, to the reproducing units behind the screen. In the Western Electric System—Vitaphone and Movietone—these generally consist of four large horns, similar to the Western Electric public-address horns. Two of them, in large installations, are twelve feet long, and are adjusted to handle the higher notes, while the other two are fourteen feet long, and handle the lower ranges. In the General Electric-RCA-Photophone systems, a battery of from one to twelve dynamic-cone speaker units is employed. In any case, the speaker installation is varied to suit the acoustics of the theater and the purse of its owner.

The volume-control of the amplifying system, commonly called the "fader", is operated by a dial in the projection-booth. It permits changing smoothly from one record to another, as the projectors are switched—to be exact, a few seconds after projector-change—and allows the adjustment of volume to the type of sound being reproduced and the size of the audience. There is also a small speaker in the booth which monitors the sound for the operator, enabling him to use his faders intelligently. In some houses, where the booth is not perfectly sound-proof, it is quite amusing to be located near the booth, for, due to your distance from the screen, you hear the sound from the monitor quite perceptibly before the sound from the screen reaches you.

There are, naturally, a good many problems yet to be solved before the talking pictures attain the success their advocates predict for them. Not all of these are technical or artistic. They work, for instance, under a great economic handicap in their greatly increased production-cost and diminished market, for the foreign market is practically closed by language limitations. But one thing has become quite well established, even at this early date: sound-films,

or, rather, dialogue-films, can never wholly replace good silent ones. Sound, *per se*, cannot take the place of good entertainment, as the producers of short sound-sketches are learning, to their cost. The addition of dialogue is, in certain cases, undoubtedly an artistic aid; in others, a great hinderance, for it slows down the action, and often entirely destroys the carefully planned tempo of the picture. Where dialogue is used entirely, but with true screen technique, in a picture suitable to its use, it is unquestionably a step forward. Where it is used partially, in a picture originally intended to be silent, it is just as surely criminal. And stage-technique, be it in direction, writing, or action, is just as fatal to the picture. Dialogue pictures must be made as such from their inception, but handled when the actual production starts in the same manner as silent pictures have been, not as stage-performances enacted before the camera. Otherwise they lose that very quality of appeal which has sold the films to a vast audience the world over.

But probably the greatest field for the sound device is in furnishing musical accompaniment for "silent" pictures; for music, like the picture, speaks a universal language which needs no translation or "voice-doubles" to become comprehensible to all nations the world over. Only so can the screen make full use of its new tool, the sound-device, and yet retain that broad appeal which built it to its present proportions.

[*Supplementary data for pictures on page 71.*

1. For Location-Work. Movietone recording outfit mounted in a speedy truck for use away from the studio.

2. Sound-on-Film Recorder. A Western Electric "Movietone" recorder as used in the studio. Note 1,000-foot magazines, and separate mounting for motor, to eliminate vibration.

3. A Wax-Disc Recording Machine, showing electrically-controlled cutting-tool.

4. A Sound-Stage. Erecting a set on an M-G-M sound-stage. Note the two camera booths, the monitor-room above, and the sound-absorbing padding on the walls.

5. Where Sound is Controlled. Monitor- or control-room overlooking the stage, where the "mixer" controls the volume of sound transmitted to the recording apparatus. Roy Hunter, Universal's chief sound engineer, is shown here.

6. On a Sound-Stage. A corner of a modern sound-stage, showing the monitor-room, and the sound-absorbent padding on the walls. Note the glass-fronted projection-booth for use when recording musical scores for otherwise silent pictures.—EDITOR.]

The Photographic Adventures of Bert and Ray

Part II

A First Lesson in Development

NEIL WAYNE NORTHEY

IT was Monday night. Down the street in the direction of the Wentworth home hurried Bert Easton. The preceding day had been the first monthly "camera-day" which Bert and his friend Ray had observed. Others were to follow on the first Sunday of every month; but this one was especially interesting in that it had been spent at Bolle's Lake, where the two friends had fished and made pictures. As a matter of fact, the fishing had been somewhat neglected for picture-making. It had been a wonderful trip, and both of the boys were eager to see how successful they had been in making a photographic record of it. Just what would the development of this, their first films, reveal?

Bert stopped at the rear door that led into the basement and pushed an electric button. Down in the workroom, which the young men had fitted up for their darkroom, a small red bulb flashed twice. In a moment the basement light glowed, showing that Ray was already in the darkroom and the coast was clear. It was a secret signal which they had installed that day and which enabled them to communicate without disturbing other members of the Wentworth family. If the basement light had only blinked, Bert would have known that to open the door to the darkroom and admit light just then would have resulted in light-struck films; therefore he would have waited until such time as the light continued to burn, indicating that no light-sensitive material was exposed.

"How goes it?" asked Bert, as he entered the room, from which emanated the odor of freshly mixed acid hypo.

"We're all ready to shoot", replied Ray.

Across the front of the darkroom sink, Ray had placed a wide board. On it were three trays. The one on the left contained developer, which had been removed from its individual

container and dissolved thoroughly in the required amount of water asked for in the directions on the outside. The center tray was filled with pure water. In the right-hand tray was a quantity of fixer, which had been dissolved at the rate of four ounces of water to one ounce of acid hypo. By using the sink in this way, the black oilcloth-covered table was left for other things; and besides, if developer or fixer were slopped over the sides of the trays during the process of passing the films through those solutions, it would drain into the sink beneath.

"Sorry Mr. Harley could not have been here to give us a start, but he received a rush order for some pictures, which he has to get out to-night", said Ray. "Guess we'll make it all right, though. I was over to see him this afternoon, and he explained as much as he could about it in a short time. I'll do the developing while you run 'em through the fixer. Then we'll not be carrying fixer back into the developer on our fingers as we would if each tried to do both."

"Righto", replied Bert. "Whose films shall we spoil first?"

"Here's one of mine which isn't so important. Just some views which I can make again sometime if these don't pan out. I marked this spool specially for the trial."

"All right, let's go", said Bert.

Ray unwound the film, detached it from the guard paper, applied a film-clip to either end, and passed the film through the water in the center tray to straighten out the curls and wet the surface so there would be no air-bells clinging to the sensitised emulsion to prevent even action of the developer. When the film was wet, he transferred it to the developer, where he slowly passed it through the solution by raising and lowering his hands alternately.

"Let me know when six minutes have passed", he said. "I am not sure that I can tell when to take this out of the developer. Directions say it should develop in six minutes at 65 degrees. I added this thermometer to our equipment when I was at Mr. Harley's this afternoon."

In a short time one of the exposures began to show an even blackness, which quickly increased in density. Ray examined it for a moment before the ruby-light.

"That's the picture I made of the lake yesterday at high noon. I got a hunch the reflection on the water gave a rather strong light, and I should have reduced the exposure. Hello! What's this?"

Ray passed the film through the developer a few times more to prevent the air staining the film through oxidation, and to bring out more detail in the images. The exposure he had last referred to proved to be decorated with a large circular dark spot in the center, caused by accidentally tripping the shutter while drawing the lens out for focusing. In the center of the strip of film was one exposure which obstinately refused to build up in density, showing plainly that it had been underexposed. It was one that had been made in the woods at a time when the sun happened to be hiding behind a cloud, and Ray had forgotten to increase the exposure. At the end of five minutes the entire strip resembled a longitudinal section of a barber pole without the color.

"How's a man to judge when to stop development on a zebra film like this?" asked Ray. "Mr. Harley said to try holding my finger back of the film, and when its shadow was as dark as the darkest part of the film it was time to stop."

"Better stick to the six-minute period", advised Bert. "Or perhaps we can use one of these exposures that appears to be normal and forget the rest."

Ray turned the film over and examined the back. Several of the exposures showed good detail from that side, which would have indicated to the experienced eye that the developer had penetrated the emulsion and done its work.

"Time's up", announced Bert, and Ray changed the film over to the tray of clear water for a washing. After it had been rinsed in three changes of water, Ray handed the film to Bert.

"What is this stuff they call 'fixer'?" asked Bert, as he began to pass the film slowly through the solution in the third tray, as Ray had handled it in the developer.

"That's a combination of hypo-sulphite of soda, alum, and acid", replied Ray. "See how milky the film appears where the developer didn't bring out anything? That means that the chemicals are still in the emulsion and not acted upon by the light or developer; and if we left them there and exposed the film to the light, the whole thing would turn black eventually. Now the hypo removes the unused chemicals in the emulsion, and the alum hardens it to reduce the possibility of scratching and frilling. The nice thing about fixer is that it can be kept indefinitely, and used over and over if it is kept free from scum and other matter by filtering it."

"How long should a film be fixed?" asked Bert.

"About as long again as it takes to clear it, says the instruction-book—probably fifteen minutes in that fresh fixer. See! It's beginning to show clear patches already. Well, I'll get back to my developing."

Two hours later, six strips of films were hanging to dry from a strong cord that had been stretched

MESSAGE FROM ABOVE
GORDON H. COSTER
HONORABLE MENTION—ARTIFICIAL LIGHT COMPETITION

across the darkroom. As fast as they had been developed and fixed they had been placed in the sink in running water, where they had been thoroughly washed for an hour.

After the films had been finished and hung up to dry, Bert and Ray examined them in the illumination of an electric light.

"Not so bad for the first time, eh?" said Bert. "I suppose a critic could find lots of room for improvement, but most of the negatives look good to me."

As a matter of fact, there were several faults in the negatives which Bert's unpractised eye failed to note, but which would show later in the finished print.

"I've been thinking that if we had got a little more information, we could have avoided a number of the simpler mistakes", said Ray. "And the chances are we will go right on making more, even though we should know better, unless we have a list of the common errors of beginners to remind us. An amateur can't think of everything. I wonder if Mr. Harley would give us such a list."

"Of course he would!" exclaimed Bert.

"Then I'm going to see him to-morrow and find out how to avoid making sick negatives, and how to diagnose some of their ailments."

"Pious idea", agreed Bert.

Here is the list which Ray prepared for his notebook as told to him by Mr. Harley the following day:

Abrasion Marks.—Black thread-like lines running lengthwise of the film. Usually caused by "cinching" the film; that is, by winding it tightly by hand after it has been removed from the kodak. This results in dust-particles and grit scratching the emulsion if there is foreign substance on the surface. Also caused by rough rollers in the kodak over which the film passes, or by accidentally passing the film through the developing-tray with the emulsion side down.

Blisters.—Caused by too much or too forceful washing; or by passing negative through solutions of unequal temperature during development, fixation, and washing, which produces unequal expansion of the film. *Remedy:* Keep all solutions at an even temperature. As soon as blisters appear, immerse the negative in an alum solution, either powdered alum or chrone alum, to harden the emulsion.

Blurred Image.—May be caused by failure to hold the camera still during exposure; or by halation, defective or dirty lens, or improper focusing.

Chalkiness (same as Hardness).—In which the highlights show little or no detail, but are virtually pure white, giving extreme contrast between the chalky whites and dark shadows. Caused largely by underexposure and overdevelopment of contrasty scenes. *Remedy:* Expose for the shadows. If underexposed, develop with weak developer, with little rocking of the tray until shadows show detail, then reduce if necessary.

Crystal Markings.—If films are improperly washed after fixing, crystals will form on the surface which scratch the film when the negatives are placed together for keeping; or when printing-paper is placed upon the negative in the printing-frame; or when the negative is inserted or removed from its file envelope. *Remedy:* Wash thoroughly.

Dense Negatives.—Caused by overexposure and full development; or overdevelopment; or chemical stain such as is brought about by the use of discolored pyro; or by prolonged exposure during development to a ruby-light that is not quite safe, which produces light fog.

Detail, Lack of.—Negatives in which the reproduction of objects is not clearly and sharply defined. Caused by using too large a stop; or underexposure—if detail is lacking in shadows—or underdevelopment; or slight jarring of the camera during exposure; or movement of the object during exposure; or weak or old developer; or overexposure—if detail in shadows is foggy.

Distortion.—Commonly seen in views of tall buildings, in which the buildings appear to taper inward toward the top, caused by tilting camera upward during exposure. *Remedy:* Keep the camera level; or if it is necessary to raise the front, keep camera-back perpendicular (parallel) with the building. Another form of distortion in which straight lines appear curved is caused by the use of a single lens. *Remedy:* Use a rectilinear lens, or one that has been corrected. Still another common example is caused by using a short-focus lens and holding the kodak too near to the subject in order to obtain a large image, in which the near parts, such as feet or other things which protrude toward the camera, appear ridiculously large compared with the body. *Remedy:* Use a lens with longer focal length; or see to it that everything in the view is on about the same plane—same distance from kodak—or make the view from a greater distance and then enlarge the portion desired if a larger picture is wanted.

Double Exposure.—Two views on one negative. *Remedy:* Always wind up the film ready for the next exposure as soon as one is made. If using plateholders, be sure that the slide shows "exposed" when it is inserted after using a plate. If using filmpacks, always pull

the paper-tab immediately after each exposure.

DOUBLE AND BLURRED IMAGES.—Object or camera moved during exposure. *Remedy:* For moving objects, use shorter exposure with larger stop, if necessary; give more distance between camera and moving objects, then enlarge if large picture is wanted; make exposure when the object is moving toward or away from the camera, whenever possible. For time-exposures, or for slow snapshots like 1/5 second, always rest the kodak on a tripod or other support. Inhale and hold the breath during slow snapshots when the kodak is held in the hand. If the wind is blowing, button the coat to prevent its yanking the body.

FADING.—Usually caused by a lack of fixation, or by insufficient washing after fixing.

FINGER-MARKS.—Usually the result of handling wet negatives with dry fingers or dry negatives with moist fingers. *Remedy:* Use film-clips; or if plates, handle by edges only. File negatives in transparent envelopes, so that when a particular negative is wanted it will not be necessary to thumb through a stack to find it. The negative can be seen without removing it from the envelope.

FLARE SPOT.—A large, circular, dark spot on the negative, caused sometimes by pointing the lens toward the sun during exposure. Another cause of flare is cheap lenses.

FLATNESS.—A lack of brilliancy, snap, or vigor in a negative, probably caused by overexposure, or overdevelopment, or fog (see FOG), or flat lighting, due to making the exposure at midday with the camera pointed toward the north; or the scene may be lacking in detail because the sun is not shining, or because the ground is covered with snow. Wait for shadows.

FOG.—If parts of a negative, or the entire negative, become darkened in certain portions which should not have been affected, it is called "fog". It may be caused either by chemical action, light-action, age of plates and films, improper storage, or by imperfection of manufacture. *Chemical fog* may be caused by too energetic a developer, either because it is too warm or contains too much alkali, or because it is too strong; or by forcing development; or by other chemical action, such as may be caused by using unclean trays, independent of light-action. Fog may also result if development is too long delayed after exposure; or if plates or films are kept too near to fumes of such things as turpentine or acids or other chemicals; or if the atmosphere in the storeroom is too moist.

LIGHT-FOG.—May be caused by a camera or plateholder which leaks light; or by overexposure or accidental exposure to light; or by dirty lenses, reflections within the camera, an unsafe darkroom light, or by not shielding the lens from the sun during exposure. The darkroom light should be tested by exposing half of a fresh plate before it for ten minutes and then developing. If the exposed half darkens, the light is unsafe. Small light-leaks in cameras are hard to find, but sometimes they can be found by taking the camera to the darkroom and inserting a pocket flashlight in it after the eyes have become accustomed to the darkness.

FRILLING.—A loosening or wrinkling or peeling of the emulsion around the edges of a negative caused by using too warm developer, usually in hot weather; or by using too much alkali in the developer; or by too much soaking and washing; or by using solutions and wash water of different temperatures; or by too strong fixer. *Remedy:* Keep developer, fixer, and wash water at an even temperature, around 65 degrees; use only sufficient alkali to do the work; fix in a hypo bath which contains a hardener like powdered or chrome alum, or immerse the negative in a weak solution of formalin as soon as it starts to frill.

GRITTY NEGATIVES.—May be caused by sediment in water; or by insufficient washing, which leaves small crystals of unremoved chemicals on the emulsion after drying. *Remedy:* Strain doubtful water through a cloth to remove foreign substances; wash negatives thoroughly; sponge off surface with a ball of cotton under running water before drying; avoid soaking negatives flat in a tray for any length of time with the emulsion side up. Stand or support on edge whenever possible so that the particles will not settle into the soft emulsion.

GRAIN.—Sometimes resembling leather. Caused by too much carbonate in the developer; or by too violent rocking of the tray during development; or by too slow drying.

HALATION.—The blurring of brightly lighted portions in a negative, such as windows which are included in an interior view, particularly noticeable when such lighted portions appear next to shadows. Caused by the spreading of light within the film; or by the back of the plate reflecting light back to the emulsion. *Remedy:* Avoid making exposures directly against brilliantly lighted windows, arc lamps, reflections, etc., whenever possible. Use film instead of glass-plates, as film does not reflect the light back as does glass; or use double-coated plates, or plates that are backed with black paper in the holder, or with a non-reflecting, light-absorbing emulsion backing. When making an exposure directly against an open window, pull the blind and make a flashlight of the interior,

EASTER
GEORGE MILLER, JR.
HONORABLE MENTION—ARTIFICIAL LIGHT COMPETITION

then raise the blind and give a very short exposure for the window before moving the camera. Use the same method when electric lights are involved. Use a weak developer. Rub down affected spots with cotton dipped in alcohol.

HARDNESS. (See *Chalkiness.*)

HIGHLIGHTS FOGGED.—The highlights are those portions of a view which have received the greatest amount of light, such as white clothing, face and hands, snow, reflections, etc. In a negative these portions appear reversed, that is, they are opaque (dark) instead of clear (white). (See *Halation.*)

LEATHERY.—Caused by too much alum in the fixing-bath; or by using an alum-bath that is contaminated and dirty.

LIGHT-STREAKS.—May be caused by uneven development; or by leaving the film too loose on the spool after removing it from the kodak, which may also cause dark edges; or if it is a plate, it may be caused by inserting the corner of the slide first. Filmpacks sometimes show light streaks if the cover paper is carelessly pressed inward while inserting the pack in the holder.

LONG SHADOW IN FOREGROUND.—Caused by having the sun directly back of the photographer during exposure, and especially when the sun is low. Snappier negatives can be made when the sun shines partly from the side, thereby breaking up an otherwise flat lighting with shadows.

MOTTLED.—Caused by failure to agitate the tray during development.

OVERDEVELOPMENT.—Results in good detail, strong contrast, increased density over the entire negative, and probable chemical and light fog. May be caused by too warm or too strong developer, or by inability to tell when to remove it from developer. *Remedy:* Reduce.

OVEREXPOSURE.—A general quick darkening of the entire negative giving flatness and lack of contrast if underdeveloped. If normally developed, it may have good detail but foggy highlights, and may make a fair print. If overdeveloped, its slow printing qualities make it about worthless. *Remedy:* Add a few drops of a 10 per cent. solution of bromide of potassium to the developer, give full development, then reduce if too dense. It is natural for the amateur to want to remove an overtimed negative from the developer before it is developed, due to its sudden darkening; but to do this results in a thin negative lacking in contrast. Such a negative should first be placed in Farmer's Reducer, to thin the shadows, and then intensified.

PINHOLES.—Small transparent holes in the emulsion, caused either by dust in the camera or plateholder; or by air-bells on the surface during development; or by using old fixer in which a precipitation has formed. *Remedy:* Keep dust away and filter fixer. Remove air-bells instantly with a wad of cotton saturated with developer. Pass films through water a few times to make them limp and to wet the surface. If developing plates, place them in the tray and flow the developer over them from a graduate, thus carrying away dust and air-bells from the surface.

SPOTS.—If white, probably caused by improper fixation due to air-bells excluding the hypo. If dark or purplish spots or pinholes appear, they are caused by undissolved chemicals, probably pyro, in the developer. If triangular clear spots or blotches show, they may be caused by a scum on the developer which attaches itself to the surface of the negative and excludes the developer; or they may be formed by drops of hypo or bromide which were accidentally spilt on the surface before development, which prevented its acting on those places. Rust-spots are caused by the presence of iron in the water which is used for washing negatives or mixing solutions. If irregular in shape, transparent spots are caused by dust or splinters of glass. Round spots, if transparent, are caused by air-bubbles on the negatives during development, although, if the air-bell is broken during development, the spot will not be quite clear.

STAIN.—If covering the entire negative, probably is caused by using old developer, or not enough to keep the negative covered; or too warm or too strong; or by examining the film—leaving it exposed to air—too long during development; or forcing development; or by using developer-stained fixer; or lack of washing between developer and fixer; or by not using enough sulphite in the developer. If the stains appear in horizontal streaks across a film, they were caused by leaving the film folded and partly exposed to the air at the folds in a tray of developer, or water—between developer and fixer—or fixer, and oxidation took place at the uncovered portions.

UNDERDEVELOPED.—Negatives showing good detail throughout, but very thin. Caused by misjudgment, or by using a cold or weak developer. Allowance should be made for the kind of developer used, and for some loss in density during fixation, also for the fact that some plates and films "fix out", or loose density, more than others. *Remedy:* Intensify. Keep all underdeveloped negatives together until they have passed through an intensification solution.

UNDEREXPOSURE.—Can be distinguished from underdevelopment by the fact that the under-

exposed negative is harsh and shows virtually no detail in the shadows, regardless of how much it is forced in development. *Underexposed negatives cannot be intensified to any extent*, because it is impossible to bring out something in a negative which is not already present in a latent form. The purpose of intensification is to strengthen the image by working upon the silver-salts which the light affected, but which the developer was not permitted to finish bringing out. Obviously, in underexposure the silver-salts in the emulsion have not been affected by light, therefore the intensifier cannot act upon them. Forced development produces dense highlights and extreme contrast. *Remedy:* Soak in clean water for a half hour or more and transfer to a weak developer and develop slowly, with only an occasional rocking of the tray. Keep well covered to exclude all light.

Uneven Density.—Caused by moving a half-dry negative to a warmer place where the remainder dries more rapidly; or by failure to cover all of the negative with developer at the start.

Weak or Thin.—If clear shadows, the negative was underexposed. If there is foggy detail in the shadows, it was underdeveloped, or the developer was too weak or cold.

White Scum.—Probably due to improper elimination of developer or hypo before placing the negative in an alum bath.

"That looks like quite a list of pitfalls", said Mr. Harley when he had concluded, "but most of them are simple and easily avoided after they are known. By the way, when do you expect to make prints from your first batch of negatives?"

"To-night", replied Ray.

"Then suppose while we are at it we make a list of common mistakes in making prints, and you will have it before you start on them. Of course, many of the things said about negatives apply to prints also, but there are a few others we might consider."

(*To be continued*)

[In the next instalment, Bert and Ray adventure into the realm of print-making.—Editor.

Profitable Picture-Making

A. OSCAR WIGGENJOST

MANY amateur photographers, no doubt, have often wished they could make better use of the photographs which they have made. It is very easy to make profitable disposition of photographs of a great variety of objects, if the picture-maker will but stop to consider the many ways such photographs can be made use of in the form of advertisements and illustrations for numerous magazines and newspapers.

For instance, with a Model B, 3-A Postcard-size Kodak, the writer snapped a picture of a new front-wheel brake on a motorcycle, a device just recently manufactured for the first time in America. (See Figure 1.) This picture was made outside, on a slightly hazy day, 1/25 second, stop F/11, with portrait-attachment, at two feet six inches distance from object to lens.

A picture such as this, of a newly manufactured device or improvement, is instantly available to many magazines and journals that publish news-items of this sort.

Suppose, then, that the photographer takes a motor-trip some bright sunshiny day and happens on some new parks or boulevards, or as in this instance, on a new cemetery. The thought occurs, Why would not this be fine news for some "improvement" journal? And so a picture is made to show the great new park—like landscape. In order to get depth of detail at both close and distant range, a tripod must be used, with the smallest aperture F/45 and an exposure of ½ second. (See Figure 2.)

Proceeding through this new cemetery, one discovers that it certainly is new and will have no tombstones whatsoever, but instead will have cement grave-markers, with numbers on each, and every one to correspond with numbers on the sidewalk running the full length of the main center parking.

Here, truly, is an idea; and to accompany the first picture, another is made to show two of these new markers laid alongside the corresponding number on the walk.

Perhaps you have left the tripod in the car—if so, simply place the camera on the walk, measure the distance from the lens to the object when using the portrait-attachment, and set the diaphragm opening at F/11, with the speed in

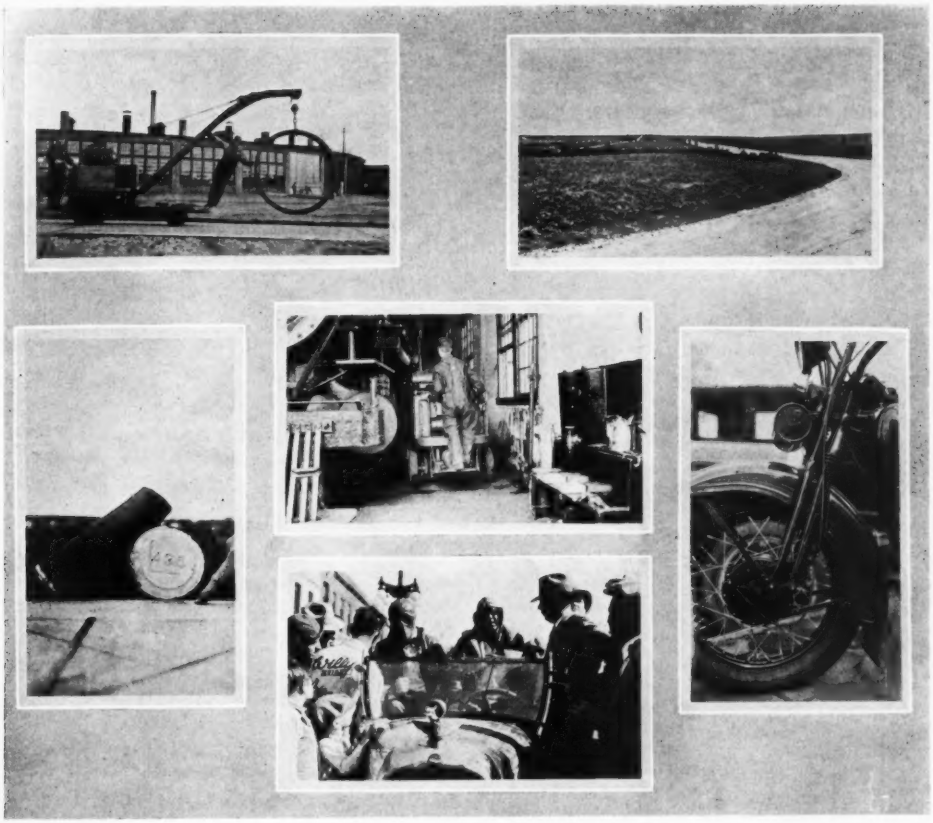


Figure 4 *Figure 5* *Figure 2*
Figure 3 *Figure 6* *Figure 1*

SOME PROFITABLE PICTURES A. OSCAR WIGGENJOST

this particular case at 1/25 second. Then, with the left hand on the cable release, point to the numbers on the sidewalk with the first finger of the right hand, and with a click you have a record. (See Figure 3.)

Perhaps pictures of a cemetery hold no interest for you. If so, there is lurking in every business, and in almost all manufacturing plants, opportunity to make interesting photographs.

Figure 4 is a picture, made at F/11 and 1/25 second, of an electric crane used at a large railroad shop; and, as this useful labor-saving device is quite new, pictures of it should be of use to a number of magazines that specialise in the publication of articles pertaining to just such machinery.

As we follow the crane about the shops, watching intently its every move, the quiet running vehicle becomes even more interesting as it glides alongside a huge monster of the rails and gently handles a heavy tire that forms a tread on the locomotive's wheels.

Here another opportunity presents itself to make a picture of the actual working of the hoist; but haste is imperative, and, quickly using the range-finder mounted on our trusty Kodak, a picture is made at ½ second during a moment of rest of the operator and machine. This being an inside photograph, with light none too good, the lens is opened to F/6.3.

All sorts of pictures of almost every kind of device, and especially new ideas, are eagerly sought by many publishing houses.

Figure 6 is a photograph made during a three-

minute rest-period between laps of an endurance run of a light automobile. The driver, constantly at the wheel, had spent up to the time of the making of this picture four days and nights driving this car, covering eight laps, with one more lap to go.

What action!—a hasty gulp of hot coffee, a few friendly words of encouragement, a reaching hand to receive the cup and saucer, a tired but determined look on the blistered face of the driver; then off again on a grinding race against time. Such pictures are in demand, always.

Simplified Enlarging

FRANK V. O'CONNOR

LOSS of interest in things photographic may often be traced to bulky equipment—or cumbersome methods. We can all cite instances. Only recently I met an old friend who had been an enthusiast on cameras, of which he had accumulated quite a collection. He asked me if I wanted to buy any of them. He had become thoroughly tired of carrying them about, he said, and hereafter in his travels would rely upon the picture postcard and local prints.

But while we were chatting there seemed to be an undercurrent that indicated that he was not entirely sold on the idea of giving up this pleasant hobby; so I unpocketed my little roll-film vest-pocket outfit and permitted him to handle it. He took a liking to it, but complained that the pictures were too small. He did not have time in the evenings to enlarge. He had no darkroom, living as he did in one of the modern apartments. Then there was so much time to be lost in turning out prints, he simply couldn't be bothered. But now he has the small camera, does his own enlarging, and finds it fascinating, pleasant, and extremely simple. Here is the idea:

At my home there is quite a family and, therefore, no spare room. On certain evenings, I have the use of the bathroom for printing and developing, with the customary injunction against stain and litter. My room has north windows and a standard-size clothes-closet.

When I first undertook to enlarge, it was with the old popular method of blocking out sundry windows, setting up a camera at a suitable aperture in one of the blinds, the erecting and aligning of a runway for the easel, and then the testing for and eliminating of light-leaks—well, anyone who has ever tried it knows the whole formula—and if we commenced operations at noontime it was usually late in the afternoon before we flashed our first image on the screen; and, after the few prints were made, we had to restore the room to its original condition.

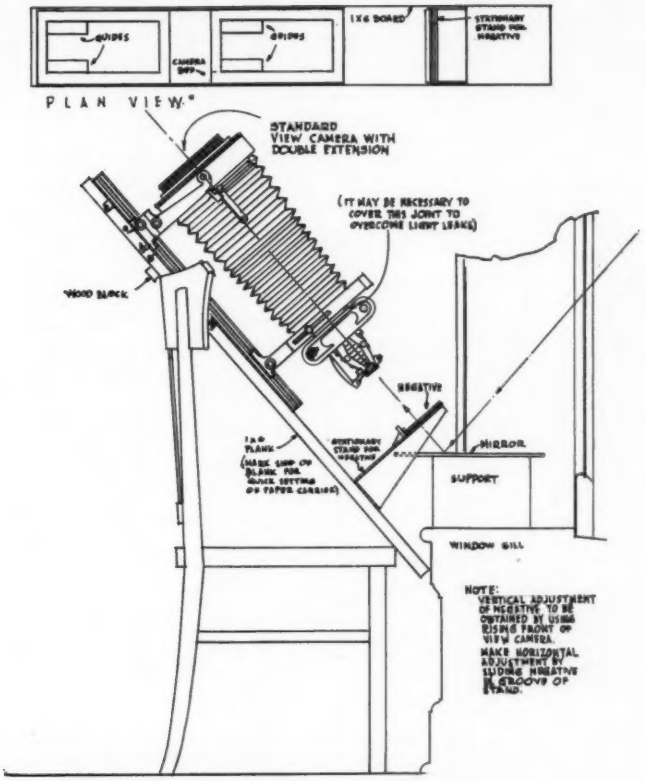
There is no pleasure in this black-room system; there is ever present the danger of upsetting the solutions or the supply of water, with the possibility of damaging the ceiling below. There is great difficulty in measuring the light-strength and, of course, another objection is that with the "makeshiftness" of the apparatus there is great danger of the easel being out of alignment with the negative and lens.

So we became a revolutionist. Not wishing to give up the cool, cheap, convenient daylight feature which was available on my Saturday afternoons, I decided to make an enclosed enlarger adjustable for a reasonable variation of magnification with a minimum of effort. My films are 2¼ x 3¼ and 1 5/8 x 2½; so after some cogitation on album and framing sizes, I went out and bought a second-hand 5 x 7 view-camera with double-extension bellows. When this outfit was opened up at home, it was found to leak light at nearly every fold; but since the work was to be done indoors, this defect could be overcome by draping a piece of focusing-cloth over the bellows; and the price I paid made this defect really negligible.

A piece of one-by-six plank of sufficient length was fitted with a set of cleats to carry the camera and a stationary negative-carrier, the latter being hinged to fold down for storage. Then a couple of blocks were attached to the under side, so that the board could be hung over a chair-back at an angle of about forty-five degrees, with the negative-carrier at the lower end to receive the skylight reflected from a mirror of sufficient size placed horizontally on or above the windowsill.

A little cabinet work was necessary to provide a substitute for the lens-board, so that the old No. 1 Folding Pocket Kodak could be mounted complete with back removed, the front of the Kodak pointing toward the negative. This, we are told, is not the proper way to set the lens; but results are quite satisfactory, and in addition to gaining focal length there is really no other way to mount the Kodak.

This arrangement permits enlargements of from two to five diameters; then, by attaching



SKETCH FOR ENLARGING APPARATUS

FRANK V. O'CONNOR

SIMPLIFIED ENLARGING EQUIPMENT — FRANK V. O'CONNOR

a copying-lens and dropping the camera an inch closer to the negative, we can work from six to nine diameters. A slight diffusion, not at all unpleasant, seems to result from the use of the copying-lens; but this is overcome by stopping down a trifle.

Ordinary plateholders fitted with clear glass are used, the paper being placed back of the glass by sense of touch in the clothes-closet. Of course, the groundglass is reversed in the camera to be in the same plane as the paper.

Now as to procedure: At any convenient time, we check over our contact prints or negatives with a pair of L-shaped cards, framing down until we obtain the desired arrangement. On a print we run a sharp pencil about this framed section for a temporary record which can later be erased. One of my angles is marked to indicate the degree of magnification necessary to fill a 5 x 7 print. This diameter size is also marked lightly on the print. Then we select a convenient time of day and set about the actual business of enlarging.

The actual exposure must be computed from a set of tables which each worker must himself prepare to suit local conditions. As a guide for this computation, I will explain that mine is based on a strength of daylight that will make the quarter-tint on a Wynne meter in sixty seconds, the meter being placed on the mirror at about the focal axis of the camera lens. In summer, on a clear day, this tinting is usually complete in fifteen or twenty seconds, permitting a corresponding reduction in the time of printing.

The table is based on a theoretical negative requiring one second for a contact print on Portrait Velox held six inches from an old 16-candlepower electric lamp. The average Brownie snapshot makes a print in two to four seconds under this condition. With the aid of a table of comparative exposures for various enlargements, to be found in the *American Annual* or the *British Almanac*, the preparation of such a table is not much more than arithmetic. I submit my own table only as an example. It is based on using Stop F/16. You will notice that the factors for the copying-lens are small when compared with enlargements without this lens. This is due, of course, to the resultant shortening of the focal length.

For a 2-diameter enlargement multiply by 2

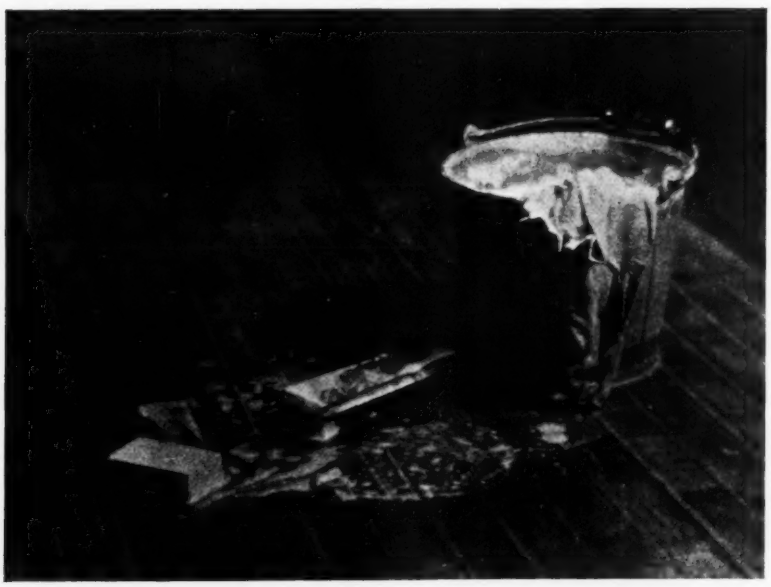
2½	3
3	5
4	8
5	13
6	8
7	10
8	12
9	16
10	20

Thus, if you have a negative requiring five seconds for a contact print under the conditions described, and you desire to make a four-diameter enlargement of a portion of it with a light-strength of thirty seconds, you multiply the printing factor (5) by the enlarging factor (8) and again by the light factor (1/2), which gives twenty seconds. This is for stop F/16 and may be shortened with the opening of the diaphragm.

It is well to keep a record of each enlargement, showing film file-number, Velox speed, enlargement-diameter, Wynne meter-time, enlargement stop and exposure. The plateholders are numbered consecutively and paper is changed in the closet in the order of exposure.

Developing is done in the regular way. I use a couple of trays for developing, so as to keep as many prints as possible in the solution. In warm weather, minimum handling keeps the temperature down and eliminates stains. Having no darkroom, this developing must await the evening, when it is done in bulk.

The advantage of working by daylight in an undarkened room is the effect on one's morale and the ability to quickly detect any variation in the light-strength. It is also much cooler than working by artificial light and considerably faster. With the method herein described, one can accomplish considerable in a short time.



INTERRUPTED TOIL — HARRY B. FISHER

HONORABLE MENTION—ARTIFICIAL LIGHT COMPETITION

Mood in Photography

DONALD W. GILLINGHAM

IT is a well-known axiom that amateur camera-enthusiasts are divided into two types. One snaps at random, and extravagantly, with a view to filling his album and entertaining his friends over a cup of tea. As records, his photographs are interesting, often

THE HARVESTER'S CABOOSE
DONALD W. GILLINGHAM

amusing—occasionally praiseworthy, when, by a chance stroke of luck, they include the technical qualities of a good picture. The other type gives a little forethought to his subject, often prefers pictorial photography, and uses his exposures sparingly with a view to making a collection of artistic pictures for his own satisfaction and perhaps the pleasure of his friends.

An album at once decides the type to which the photographer belongs; for it is not only a mirror of the past but a mirror of the man himself. Pictures, like descriptive writing and painting and other expressions of art, are a reflection of personality. One is stamped either an artisan or an artist, a realist or a romanticist.

The quality usually found predominating in the pictures of this second type of cameraman is mood. The pictorial photographer has not snapped something that is pleasingly arranged, like a stage-setting, in an attempt to be artistic, nor has he made the picture under the sun at noon, when the shadows are harsh. He has sought something that captures the mood of nature—the storm on the hills, the lake at twilight, the first frosts; and he has avoided the hackneyed picture, the snapshot made from a popular viewpoint. He has been original, and, by the manipulation of the lens-diaphragm and the shutter, has recorded on his negative something more than a black-and-white scene.

It is the fallacy of many photographers to drive home to beginners the idea that a picture of, say, a barren waste with nothing on it, is useless. You must have a tree to frame this corner, or a man standing here, or some other thing nicely arranged in the foreground or in the background. True, sometimes this "placing in" is necessary for relief or as a means of comparison; but regardless of all this, if there is mood in the picture, if it appeals to you, makes you feel the terrible desolation of the barren landscape, it is a good picture.

After all, there is no stereotyped test for a good picture. The best test is the test of appeal; for photographs are like stories. One example of prose may be the acme of polished English, ingenious in plot, faultless in construction—but soulless. Another may be technically imperfect, here and there, but filled with color and the real stuff of life, to which we respond emotionally. In pictures the combination of both virtues is as rare as in literary art; its acquirement points to the birth of a master-photographer.

Take, for instance, the photographs illustrating this article. Examined critically, they have their faults; but they are all reflections of moods, and, for the cameraman who was there at the time, these moods are lived over again, either with joy or sorrow, according to the profundity of his humor, as he turns the pages of his album before the winter hearth.

THE BLIZZARD DONALD W. GILLINGHAM

THE ROAD TO THE FUTURE
HIROMU KIRA

Technique

C. W. GIBBS

TECHNICAL perfection is the first essential for a good pictorial photograph. Technique should be mastered before any work of an artistic nature is attempted. It would be worth while for more than one pictorialist to stop exhibiting his work for a year or more and merely perfect his technical knowledge. He should pick out some difficult subject and work with it until his knowledge of it, photographically, is perfect. After mastering one subject, it is easy to master others. In trying all kinds of procedure on one subject, you get to know that subject so thoroughly that the slight differences in the results caused by different procedures will be easily seen and will be remembered when doing other photographic work.

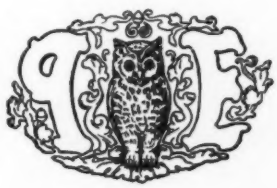
If any wish to try this method of improving their work, I should suggest that a subject be chosen that could be used in still life. In following this method myself, I chose glass, because I had never seen a photograph of glass that I thought was technically perfect. After a subject is chosen, spend a few hours studying it carefully. Take it into the studio and watch the effect of different light-conditions on its form and texture. Every subject has certain peculiarities that must be considered carefully. In lighting the subject, not only must the angles and intensity be thought of, but the color and quality of the illumination.

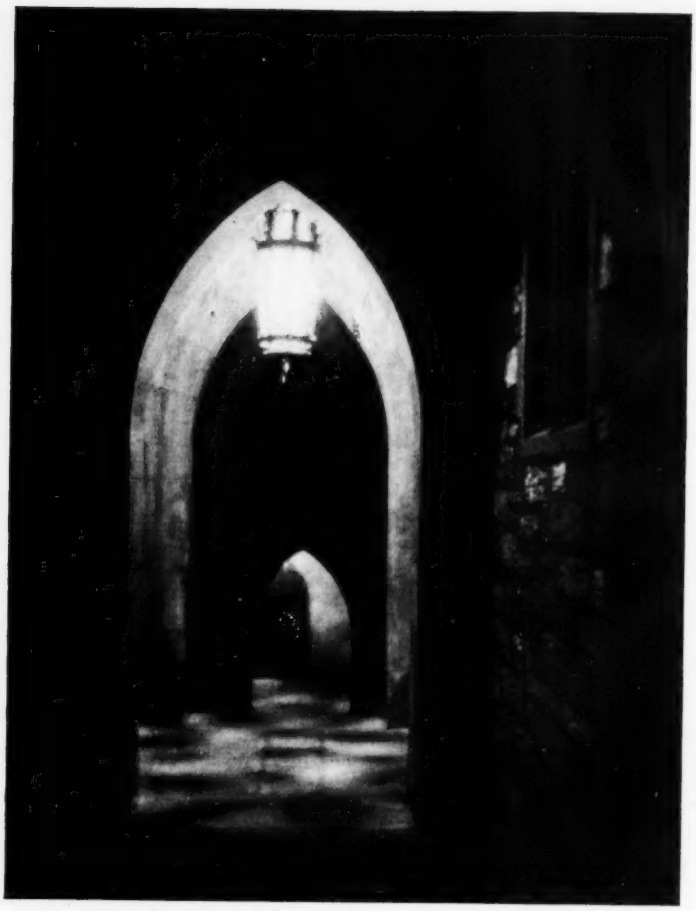
Do not slight the camera manipulation. Swings and tilts are put on cameras to be used. Find out what they do. Try lenses of different focal lengths. Different types of negative-emulsions will produce widely varying results. I have found that it is advisable to study textures. In doing this I should make a still life of a material such as silk, and photograph it on different types of emulsions and under different illuminants to see the effect of the quality of the light on the different emulsions and the effect on the rendition of the textures. When experimenting, try everything. If you make a mistake or get poor results, you will learn something by analysis of your errors. Everyone has not the equipment or the time to follow these suggestions; but every bit of time spent on improving technique, even if it is only a little, is worth while.

Photography is too easy. The man who shoots his stuff on a roll of film and leaves it at the drugstore to be finished considers himself as much of a photographer as the highly trained photographic scientist. To my mind, a man is not a photographer until he knows before he snaps his shutter exactly what every tone in the subject will look like in the final print. It seems that most of us delude ourselves into believing we know exactly what we are going to get; but, truthfully, we must admit that we seldom come close to it.

Many photographers are so interested in some particular part of photographic work that they specialise in it until they are nearly perfect. Then they stop. When that point is reached, they have only started. They should then try to perfect their technique in other lines. After trying another branch of photography for a while and going back to their original subject, they will find that they have new ideas of perfection and still have a long way to go to reach perfection.

It probably seems impossible to reach a stage of perfection where we can photograph any subject and give a perfect representation of it in our print. Well, even if we do not become so perfect, still, in trying to reach that objective, we shall keep improving in our work; and, in turning out better work, we shall get more enjoyment out of our hobby.





ARCHWAYS
IDA W. PRITCHETT
HONORABLE MENTION—ARTIFICIAL LIGHT COMPETITION

EDITORIAL

Photography is There!

IN popular parlance, when a person is said to be "there", it signifies that there is no question of that person's ability, skill, character, or efficiency. In short, the man or the woman who is said to be "there" is assumed to be able to rise to any occasion and to meet any emergency. In a sense, no higher compliment can be paid than to say, "When we got in a tight place, it was John who was 'there' and who knew just what to do"; or again, "During our mother's long illness, it was faithful Mrs. Brown who was 'there' as nurse and friend." In considering this colloquial or perhaps slangy use of the word "there", it seems to us that it applies to photography with remarkable appropriateness. Let us forget whether or not the use of this word is really correct and let us turn our attention to its popular meaning when used as already mentioned. We are convinced that photography is "there". Why? Well, let us consider briefly one or two reasons.

There are many men and women who lead strenuous, busy lives. To them, some quiet hobby is vitally important as a means to refresh tired minds and bodies and to relax tense nerves. A camera, the shores of a beautiful lake, the hills, and the woodland path lead the weary man or woman to see something higher and more spiritual than the daily grind. Nerves become quieted, color returns to pale cheeks, and to-morrow is anticipated instead of being dreaded. In thousands of such cases all over the world, photography is "there".

Then we have the young man filled with the desire for thrills, excitement, and adventure. There are few hobbies or professions that can offer more thrills than a combination of aërial, press, exploration, and marine photography at home and abroad. From being a quiet and restful pursuit, photography can swing to the very opposite extreme and offer those who desire action all that any normal man or woman can demand, *and then some!* For those who crave the element of danger, as well as the lure of the unexpected, we know that photography is "there".

In the great field of industry we find that, directly and indirectly, photography is serving the world as never before. In fact, there is now hardly a manufacturer or a dealer who does not use some form of photography in the production, sale, or publicity of his products. Even in the rush and roar of great machines and the pressure of modern industry, we find that photography is "there".

Then we come to the magnificent part that photography is playing in medicine through the X-ray and microscope. The modern hospitals, and many leading physicians and dentists, consider the photographic laboratory as important as any other part of medical equipment. Through photography, suffering and loss of life have been reduced, and physicians, surgeons, and dentists have worked with greater knowledge and with greater success. Who will say that photography is not "there" in helping to alleviate the suffering of humanity?

In the matter of education, photography is assuming a position of tremendous importance. By means of pictures, future generations will be taught more accurately and clearly. Many subjects in school and university will take on an added interest through modern methods of visual education. It is being proved more convincingly every year that photography is "there" in education.

Whether photography is accepted as an art, or not, by the older schools of painting and sculpture, we notice that photographic exhibitions are being held more and more in art galleries and museums. We also notice that the public is becoming more photographic-minded and that the distinction between a snapshot and a really beautiful photograph is being made and understood. Among the higher arts, who can justly say that photography is not "there"?

In all that we have stated we would include amateur and professional motion-pictures. In using the inclusive term of photography, we had in mind every branch of photography; but lest we be taken to task for omitting a specific reference to motion-pictures, we have added this paragraph. It is obvious that still- and motion-picture photography, amateur and professional, are working hand in hand in the service of mankind. Together they are producing convincing evidence that photography is "there" in the work and the play of the world.

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Advanced Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $3.00.

Honorable Mention: (*a*) Those who win an Honorable Mention Award and are *not regular subscribers* will receive PHOTO-ERA MAGAZINE for six months with the compliments of the publishers.

(*b*) Those who win an Honorable Mention Award and are *already subscribers, or have been subscribers,* will receive an Honorable Mention Certificate. Those who win ten of these certificates and send them to us to be recorded will receive a neat silver cup, suitably engraved. There is no time-limit. However, ten certificates must accompany all requests for the cup.

Prizes may be chosen by the winners, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books. If preferred, the winner of a first prize may have a silver cup, suitably engraved.

No Prize or Honorable Mention pictures are sold, exchanged or the halftone-plates sold without permission, in writing, from the maker of the print. Proceeds of all sales, *excepting halftones,* go to the maker of the picture.

All competition-pictures not returned are used to make up the PHOTO-ERA PICTURE EXHIBIT which is sent to schools, libraries, museums, camera clubs, and to responsible organisations for exhibition-purposes, *free of cost.*

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. Not more than two subjects may be entered. *Composition, exposure and photo-finishing must be done by the competitor.* Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered into competitions elsewhere, before PHOTO-ERA MAGAZINE awards are announced.

3. Prints on rough or linen-finish surface, and sepias, are not suitable for reproduction, and should be accompanied by smooth prints having the same gradations and detail. Prints may be mounted or unmounted.

4. Each print must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately,* giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer, and printing-process. Enclose return-postage. Data-blanks sent at request.

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he shall have received official recognition.

Photo-Era Prize Cup

6. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces is sent with data.

7. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right-angles to each other.

8. Competitors who have won three first prizes within a twelvemonth become ineligible to receive prize cups in this competition for *one* year thereafter.

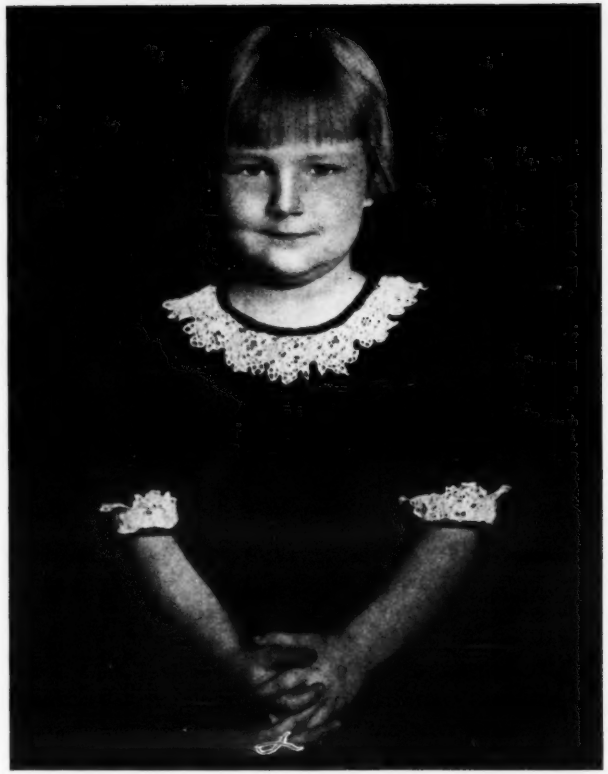
AWARDS—ADVANCED COMPETITION
Subject—ARTIFICIAL LIGHT PHOTOGRAPHS
Closed May 31, 1929

First Prize . . . . . William F. Happich
Second Prize . . . . . Yock L. Chu
Third Prize . . . . . Chas. Clayton, Jr.

Honorable Mention: Edward Alenius; Chas. C. Blanchard; Mary Callaghan; Daisie B. Chapell; Joseph Christ; Boris Chudadoff; Carl D. Clarke; Gordon H. Coster; James P. Dunn; William Findlay; Harry B. Fisher; E. Paul Fleming; Sam Gitlitz; Zoltan Herczegh; U. Stephen Johnson; Elaine H. Kern; Dr. Maximilian Kern; Hiromu Kira; Alexander Leventon; George Miller, Jr.; John C. Moddejonge; Carl H. Moulton; Geo. W. Payne; Clarence Ponting; William H. Pridham; Ida W. Pritchett; W. Neal Siebold; Maurice Smith; Count Sparre; Dwight Streeter; Dr. Max Thorek; Alvin Zachary.

"TWELVE O'CLOCK AND ALL'S WELL
WILLIAM F. HAPPICH
FIRST PRIZE—ARTIFICIAL LIGHT COMPETITION

HIS RESTING HOUR — YOCK L. CHU
SECOND PRIZE—ARTIFICIAL LIGHT COMPETITION



DOROTHY ELLEN — CHARLES CLAYTON, JR.
THIRD PRIZE—ARTIFICIAL LIGHT COMPETITION

SUBJECT FOR NEXT COMPETITION

ADVANCED WORKERS

Subjects for Competition—1929

"My Home." Closed January 31.
"Portraits." Closed February 28.
"Indoor-Genres." Closed March 31.
"Miscellaneous." Closed April 30.
"Artificial Light Photographs." Closed May 31.
"Architectural Subjects." Closed June 30.
"Pictures of Children." Closed July 31.
"Miscellaneous." Closes August 31.
"Outdoor-Genres." Closes September 30.
"Animal Pictures." Closes October 31.
"Water-Scenes." Closes November 30.
"Miscellaneous." Closes December 31.

Outdoor-Genres

DURING this vacation-month of the year there are many opportunities to make pictures which will meet the subject requirement for this competition. For the benefit of the many new readers who have joined our PHOTO-ERA family since a year ago, let me point out that the term "outdoor-genres" should not frighten would-be competitors. In plain English an "outdoor-genre" is nothing more or less than a picture of person made while he or she is at work or at play. The important thing to remember is that there must be no posing or camera-consciousness of the subject. The best genres are those which are made when the subject does not know that a camera was being used in the vicinity. The illustration on this page is a good outdoor-genre of its type and it tells a convincing story. It should be evident that there is an opportunity for the dramatic as well as the humorous in the making of outdoor-genres. Humanity is ever interesting, whether at work or at play.

It may not be amiss to caution prospective competitors in this competition to be tactful, considerate and patient when looking for good subject-material. It should be remembered that although we cannot help being photographed when we are unaware of the photographer's presence; yet, we might like to have the privilege of saying something as to when and how our picture is to be used. In short, stalk photographic subjects as stealthily as you will and catch your "victim" unaware, if you can; but after the "shot" give him the privilege of at least knowing that the picture was made and that you appreciate his co-operation and will abide by any requests he may care to make with regard to its display or publication. I know that such consideration is appreciated by the "victim" and it dignifies the pastime or profession of pictorial photography.

A. H. BEARDSLEY.

THE IDLERS — DONALD WIGHT BECK

EXAMPLE OF INTERPRETATION

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA MAGAZINE, Beginners' Competition
Wolfeboro, New Hampshire, U.S.A.

Prizes

First Prize: Value $7.50.
Second Prize: Value $3.50.

Honorable Mention: (a) Those who win an Honorable Mention Award and are *not regular subscribers* will receive PHOTO-ERA MAGAZINE for six months with the compliments of the publishers.

(*b*) Those who win an Honorable Mention Award and are *already subscribers, or have been subscribers,* will receive an Honorable Mention Certificate. Those who win ten of these certificates and send them to us to be recorded, will receive a neat silver-cup, suitably engraved. There is no time-limit. However, ten certificates must accompany all requests for the cup.

Prizes, chosen by the winner, will be awarded in photo-materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA MAGAZINE, or in books.

No Prize or Honorable Mention pictures are sold, exchanged or the half-tone plates sold without permission, in writing, from the maker of the print. Proceeds of all sales, *excepting halftones,* go to the maker of the picture.

Rules

1. This competition is open only to beginners of limited experience with practical camera-activity. *Composition, exposure and photo-finishing must be done by the competitor.*

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints and enlargements up to and including 8 x 10 inches.

4. Prints representing no more than *two* different subjects, for any one competition, and printed in any medium except blue-print, may be entered. Prints may be mounted or unmounted, as desired. Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competitions elsewhere, before PHOTO-ERA MAGAZINE awards are announced.

5. Prints on rough or linen-finish surface, and sepias, are not suitable for reproduction, and should be accompanied by smooth prints having the same gradations.

6. Each print entered must bear the maker's name and address, the title of the picture, and the name and month of competition, and should be accompanied by a letter, *sent separately,* giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks sent at request.

7. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA MAGAZINE, unless for special reasons. This does not prevent the photographer from disposing of other prints from such negatives *after* he has received official recognition.

8. Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with data.

9. Prints should be carefully packed between two layers of cellular board so cut that the corrugations run at right angles to each other.

PHOTO-ERA MAGAZINE
The American Journal of Photography
Wolfeboro, New Hampshire, U. S. A.

THIS is to certify that an Award of PRIZE
is hereby given to the picture entitled

entered by

in the PHOTO-ERA MAGAZINE Monthly Competition

which closed 192

Editor

PRIZE-WINNERS' CERTIFICATE

PHOTO-ERA MAGAZINE
The American Journal of Photography
Wolfeboro, New Hampshire, U. S. A.

THIS is to certify that an Award of *Honorable Mention*
is hereby given to the picture entitled

entered by

in the PHOTO-ERA MAGAZINE Monthly Competition

which closed 192

Editor

HONORABLE MENTION CERTIFICATE

AWARDS—BEGINNERS' COMPETITION

Subject—MISCELLANEOUS

Closed May 31, 1929

First Prize . . . . . Gino Zenier
Second Prize . . . . . Alma R. Lavenson

Honorable Mention: A. W. Clark; Leland H. Croscup; Gladys L. Gilman; M. Gurrie; S. M. McNair; Wm. R. F. Quednau; Alice G. Sherbert; W. H. Smith; Evangeline D. Tienken; Harry G. Tienken; Walter E. Woestman.

First Prize

BEGINNERS'
COMPETITION

MISCELLANEOUS

NORMA — GINO ZENIER

Second Prize

BEGINNERS'
COMPETITION

MISCELLANEOUS

A SPRINGTIME SILHOUETTE — ALMA R. LAVENSON

OUR ILLUSTRATIONS

ERNEST H. WASHBURN

AUGUST is the great vacation-month for a large number of people, many of whom turn their faces toward the mountains for rest and recreation. "I will lift mine eyes unto the hills, from whence cometh my strength", sang the Psalmist of Biblical times; and so it has been down through the ages. Therefore, it is fitting that a considerable part of this issue is given to the mountains, and especially to mountain-photography.

The cover-picture, "Sea of Clouds", by Dr. Koike, has previously appeared in this publication, winning first prize in the Advanced Competition, and it was reproduced in the December, 1928, issue, where full data will be found. Inasmuch as it is a very fine print and represents Western mountains, it forms a fitting companion to the beautiful pictures of Eastern mountains in Mr. Palmer's article. It was much admired when it originally appeared; so we are sure it will please readers of PHOTO-ERA MAGAZINE to see it again and will demonstrate that we are impartial and nation-wide in our viewpoint.

It is a great delight to the present critic to hail the appearance of William S. Davis among the pictorialists who are telling our readers why they are devotees of the art-science. For several years, I have admired Mr. Davis's work—his marines in particular. High-class work in that field always makes a strong appeal, whether made by pencil, brush, or lens, and few artists in any medium can produce marines on a par with those of this artist, who, by the way, is eminent among artists of the brush. His present example, "The Lone Watcher", is among his finest, and has all the good qualities of a painting, except, of course, color. To travelers on Long Island Sound, off the Connecticut coast, the subject is a familiar one. Mr. Davis has caught it in a tranquil mood and has introduced magnificent cloud-billows, in perfect harmony with the subject. Towering toward the zenith, they emphasise by their proportions the comparative puniness of man's work. And yet, how the lone watcher serves man, and guides his course away from dangerous ledges, in calm or storm! The perspective is beautiful, perfectly depicting the hazy distance of an August morning, with a hint of distant shore line. It is a picture among pictures.

Data: Made with a Conley, Jr., 2¼ x 3¼ camera, and R. R. lens of 4¼-inch focus. Exposure, 1/100 second, at F/16, in August, at 8.30 A.M.; bright sun, on Ansco Speedex film; pyro-developed. Enlargement on Eastman Portrait bromide paper, Grade D, from a new negative containing printed-in clouds.

Mr. Palmer's article, continuing his instructive writing on the subject of mountain-photography, is ably illustrated by ten fine prints, two of which, "Arena of Winds" and "A Symphony of Hills", have appeared in the January, 1929, issue. The series is very fine and gives still greater interest and helpfulness to the context.

Cloud shadows upon a mountain are always of great beauty and interest, as they slowly cover and uncover that part of the landscape over which they float. In the picture entitled "Cloud Shadows", and also in "Burly Shoulders", they add very much to the variety of chiaroscuro. "Resolution Shelter" and "Contemplation" are more personal, introducing the human-interest element. In the latter instance, we hope a shot was also made without the figure. The inclusion of the tripod we regret. We especially like "Mountain-Mist", on account of its fine perspective and balance of lines. Mr. Palmer has learned well the way to get distance and atmosphere into his prints. A trifle trimmed from the top would, in our judgment, increase the feeling of height.

We always have a warm spot in our heart for Chocorua, whose summit is shown us on page 69. The legend of the Indian, Chocorua, who, the story tells us, leapt to his death from this place, is of intense interest. The mountain was named after him.

"In the Halls of Giants" is a bold piece of work, full of rugged qualities and abounding in rhythm of line.

"Northeast Boulder—Mt. Chocorua" is a beautiful vista, but not quite so complete a picture as "A Symphony in Hills", which has special charm for us.

Mr. Palmer gives no exact data for his prints in this issue, but interested workers will be able to learn of his method of working, by referring to PHOTO-ERA MAGAZINE of last January.

Today everybody is interested in the "talkies", and William Stull's article on the subject, "Sound-Film Processes", is particularly interesting, instructive, and timely. Very few, I believe, and the writer among the number, have much conception of the methods and means used to produce these modern films. To be shown that portable outfits, housed in completely equipped motor-trucks, are already in use, is of itself a revelation. Where the trail leads, no man knows, exactly, but the rapid development of inventions in "movies" and "talkies" is at a pace which challenges the average person to keep step with them. The group of fine photographs accompanying this article will be of very great interest and educational value to all who study them. Incidentally, the prints are "top-notch" in the field of technical excellence. The print No. 8, "Sound-on-Location", is of unusual interest. The photographer caught them all off-guard, or else the posing and acting were exceptionally well done.

Gordon H. Coster was very fortunate to obtain so effective a result as he got in "Message from Above". The recording of lightning-flashes with the camera is, of course, a matter of chance. Nobody can predict when they will occur, or where; so a camera might be set to record one without having any occur within its field. To receive so beautiful a single flash as the present example is a matter for congratulation. The way in which it zigzags across the most fitting area of the picture is remarkable. The decrease of intensity toward the zenith, and increase toward the horizon, add much to the effect. Mr. Coster deserves due credit for pointing his camera toward the spires and also for the good arrangement he has effected by judicious trimming. He receives honorable mention in the Artificial Light Competition. Some may question whether a flash of lightning is artificial or natural. The simple camera employed is worth noting.

Data: Made in Baltimore in August at 10 P.M., with a 2¼ x 3¼ camera, and single meniscus lens of

about four-inch focus, used wide open. The shutter was open five seconds. Eastman rollfilm was used and developed in A.B.C. pyro. The enlargement is on Eastman Portrait bromide paper.

"Easter", by George Miller, Jr., is a very pleasing silhouette arrangement, forming an excellent pattern. Apparently, the background has been opaqued, as the outline in several places looks too uneven for lens-work.

Data: Made at home, against a white sheet, lit by a 250-watt lamp. A 4 x 5 Graflex camera, with Zeiss Tessar of 5½-inch focus was used, and two seconds' exposure was given on Standard Orthonon plate, which was developed in Hydroquinone-Contrast developer. A Glossy Novabrom Vigorous enlargement was made.

There are so many ways to make one's camera-work profitable that it is only a matter of alertness to opportunity and good sales activity, promptly practiced, to make a success. Naturally, the camerist must have ability to produce highly meritorious results, as is the case with A. Oscar Wiggenjost, whose work is reproduced in his article on "Profitable Picture-Making". Minute detail-rendering, extremely essential to this kind of work, has been accomplished by correct exposure, development, and printing. It is on a par with the best.

Harry B. Fisher's honorable-mention print, "Interrupted Toil", is an original composition, accomplished by using a few very ordinary objects with knowledge of what he wanted to make. It is well arranged and lighted most effectively. Special credit is due for the suppression of detail in the upper portion of the picture, and for using the seam-lines of the floor-boards to form opposing diagonals to the line of the principal objects in the picture. A proper focus was obtained, softening away toward the background. The artist paid attention to every detail. The subject is unattractive, but the photographer has compelled attention by his skillful handling.

Data: Made by light of a 400-watt lamp, in home-made reflector, diffused by tracing-cloth in front of the bulb. A periscopic convex spectacle-lens of 11¼-inch focus was used at stop F/7.5, and an exposure of one minute was made on Eastman Portrait cutfilm and developed in Rodinal. Enlarged on Wellington Bromoil Rough White, from a 4 x 5 negative, which was copied from a 5 x 7 Solio print from the original negative. The copy was made 4 x 5 size to permit the negative to be used in the enlarger. The copy-negative was made on Eastman Portrait cutfilm.

Donald W. Gillingham has chosen two prints to illustrate his article, "Mood in Photography", which, without doubt, give point to his story. We are compelled to admit, however, a preference for milder scenes. "The Blizzard" looks just like one, and we prefer to be elsewhere. Just now, when all nature is at its greenest, we don't like to think of what is six months ahead of us. "The Harvester's Caboose" is typical, too. Both of these might have been taken in New England as well as in British Columbia.

"The Road to the Future" is unique. Violating all rules of composition, it nevertheless commands our attention by its oddity. It resembles a widespread fan, of which the sidewalks might represent the outer edge. This print was one of two submitted by Hiromu Kira in the Artificial Light Competition. The other received honorable mention.

Data: Los Angeles, Calif., May, 1929, 9 P.M. Contessa Nettel Camera, 3¼ x 4¼, Zeiss Tessar F/4.5, at stop F/18; three minutes' exposure; enlarged on Defender Platinum, white; M. Q. developer.

"Archways" is another honorable-mention print in the Artificial Light Competition. It is very well composed, and the artist made good use of her opportunity. Taking into consideration the fact that the sole source of illumination was from two lanterns, one of which appears in the picture, it reflects no small credit upon the judgment exercised in regard to the exposure of the film. Possibly a thinner negative, developed in weak pyro, might have rendered more printable detail in the lantern, if detail were thought to be desirable.

Data: Made at Bryn Mawr College, Pennsylvania, by Ida W. Pritchett, with a 6½ x 8½ Korona view-camera. The hour was 9 P.M., and two minutes' exposure was given at F/6.3 with a Verito lens of 11½-inch focus, on Eastman Par-Speed film, developed in Defender M. Q. Print on Artura Iris C.

Advanced Competition

By accident, Editor Beardsley's office sent the competition prints to the writer, instead of the usual group. Upon opening the package and discovering what had happened, we regaled ourself looking over the prints. It was a fine collection and we concluded that it would be "touch and go" for honors. Mentally, we noted William Happich's contribution, "Twelve O'Clock and All's Well", and decided, without extended study, that it looked like a winner, and strong for first place. We made no comment to Editor Beardsley, but, curiously, he has selected this as first-prize winner. It is an unusually fine piece of work, and would do credit to any artist in whatever medium chosen. As an example of ultra-fine photography, it is away to the fore. The whole job is without a serious flaw. Every item of the costume is in perfect keeping with the period of history represented, and the composition, posing, and lighting are beyond criticism. Here is a picture that will never become stale. We congratulate the artist.

Data: Made in a studio, in Philadelphia, by artificial light, with an 8 x 10 camera and 18-inch Verito lens at F/7.7. The exposure was one-half second, on Eastman Super-Speed Portrait film, developed in Amidol and enlarged on P. M. C. No. 7.

Another piece of fine portrait work, by Yock L. Chu, has taken second prize. Duplicate prints of this picture have been exhibited by the Edinburgh Photographic Society, Edinburgh, Scotland, and by the Portland Society of Art, Portland, Maine. The pose and simple lighting are in keeping with the title, "His Resting Hour". Relief for the head has been accomplished by means of spot-light on the background, which is really the key to the picture. Had this not been done, the whole thing would have failed, as the background would be of one tone without variety. The hand is especially well posed and lighted, forming a balance for the highlights in and about the head.

Data: Done in Mr. Chu's studio, in New York, by means of artificial lighting. An Ansco 8 x 10 camera was used, fitted with Goerz double anastigmat of 12-inch focus, used at stop U. S. 4. Exposure, one and one-half seconds, by the light of a Johnson Lamp, on Agfa Regular Portrait film, developed in Rodinal. Contact print on Enlarging Tumagas paper. Mr. Chu notes that a soft-focus negative was made by using the lens wide open, with a sheet of "thin black veil" covering the lens. By this, we assume Mr. Chu means thin chiffon veiling. This practice was quite common, previous to the advent of soft-focus lenses.

"Dorothy Ellen", by Charles Clayton, Jr., has captured third award, and is a very good example of

so-called "flat" lighting; *i.e.*, no strong shadows on the face, but with full modeling of the features, nevertheless. The flesh-tones are excellent, both in the face and hands, and the blond hair, also, is in good value. The pose is demure and childlike, but Dorothy Ellen has a merry twinkle in her eyes that says she is full of fun, and we are sure we should be fond of her. We, personally, should prefer the lace absent, at the same time realising that Mamma cannot rip it off for pictorial reasons. Possibly the artist might tone it down with a stump and crayon-sauce. The soft sheen of dress-material is well brought out. The background pattern is a bit assertive for child-portraiture.

Data: Made at home with a 4 x 5 Corona view-camera and Verito lens. Two seconds' exposure at F/8 was given, on Eastman Par-Speed cutfilm, developed in Eastman powders. The enlargement is on Ansco Crystal-Stipple Buff. The portrait was lighted by one 500-watt lamp.

Beginners' Competition

As we have mentioned on previous occasions, the beginners of today, if so inclined, can make very rapid progress, as the technique of photography has developed into such an exact science that "he who runs may read", and there is reading in plenty for those who desire to avail themselves of the mass of photographic literature now to be had. The many beautiful illustrated annuals are full of the world's best work, setting an example for those who will, to follow.

Gino Zenier, for a beginner, has gained remarkable control over his photographic media. His knowledge of posing and lighting are on a par with his technical abilities, so that a fine portrait has resulted. The spot-lighting on Norma's hair at the left side seems a little too prominent, but it is in line with a prevailing vogue. We could do without the scarf, in the interest of simplicity, but this also is the fashion. So we shall say that "Norma" is a fine portrait, strictly up-to-date in every way.

Data: Century 8 x 10 camera, with Wollensak 12-inch lens used at F/8. An exposure of four seconds was made, on Eastman Universal plate, size 4¼ x 6½. Comminone developer was used for plate and paper. The print is enlarged on Eastman Portrait bromide paper, Rough Lustre.

Alma R. Lavenson has, on a number of occasions, charmed us with her beautiful landscapes, and her present offering is well in accord with her past achievements. "A Springtime Silhouette" is based on sound composition and thorough knowledge of effective lighting. The silhouette dominates the picture, but we must especially note the placement of the tree in the spot where the different leading lines of the picture converge. The cattle- or sheep-paths running through the immediate foreground lead us around the hillside into the beautiful valley. The quality of definition and contrast upon the hillside on the left breaks it up into pleasing areas of light and dark, and it has an atmospheric charm not always met with in photography. The sky is appropriate in character, and the cloud-lines harmonize with those of the landscape. We might point out that the masking around the tree did not quite sufficiently blend the clouds into the foliage—a defect easily remedied. The ensemble is a charming landscape.

Data: Made with a 3¼ x 4¼ Ensign Reflex, fitted with Waterbury lens of ten-inch focus. Exposure, 1/20 second at F/6, with K-1 filter on Eastman Super-Speed cutfilm, at 5 P.M. in February—cloudy sun. M. Q. developer was used. Enlargement on Defender Velour Black Veltex.

IN THE TRACK OF THE SUN — WILLIAM S. DAVIS

THE EDITOR'S CORNER

Photographic Club of Baltimore Wins Cup!

DETERMINATION, steady effort, and systematic work have always been considered to be essential in the accomplishment of any definite, worth-while project. The Photographic Club of Baltimore stated quietly, but firmly, that it intended to win the PHOTO-ERA TROPHY CUP for 1928–29. It purchased a strong, well-made sample case in which to send the monthly competition pictures; it appointed a committee to see to it that pictures for the PHOTO-ERA competitions were ready, that each picture had the required data, and that the case with the club's entries was shipped to us on time. Every month this club has submitted a representative collection of prints far in excess of any other camera club. The greater part of the winning points were not prize awards but Honorable Mentions, counting only ½ point. Yet the large number of prints submitted, the steady work, month after month, gained a lead in points which has been held despite splendid efforts of other camera clubs to catch up. Altogether we feel very happy to award the PHOTO-ERA TROPHY CUP to the Photographic Club of Baltimore for 1928–29 to be held for one year, or longer, depending upon which club wins the cup for 1929–30.

In congratulating the Photographic Club of Baltimore, we by no means overlook the splendid effort which other camera clubs have made. Eleven clubs were in the race—more than in any previous year. It was apparent that a sincere effort was being made by club-committees, secretaries, and the members themselves to do some constructive work in the PHOTO-ERA race—not that the rewards would be great financially or otherwise, but that the club members might have something to work for personally and on behalf of the club of which they were members. From letters and comments received, we feel that all the extra work and effort on our part has been very much worth while. We have been in closer touch with camera clubs and their problems; and we have thoroughly enjoyed meeting, by correspondence, men and women whom we feel it is a privilege to call friends.

The First Prize in the Advanced Competition, ending June 30, was awarded to Hugo Raeth of the Fort Dearborn Camera Club; the second, to John C. Moddejonge of the Cleveland Photographic Society; the third, to Leo Mattersdorf—not a club member. In the Beginners' Competition, the First Prize was awarded to A. W. Clark of the Seattle Camera Club and the second to Sorah J. Kharegat—not a club member, but an excellent photographer in far-away India. The Photographic Club of Baltimore received six Honorable Mentions; the Fort Dearborn Camera Club, eight; the Brooklyn Institute, two; the Chicago Camera Club, two; Seattle Camera Club and Syracuse Camera Club, one each.

Below we give the scores for the competitions which ended June 30, 1929, and then the total of scores for the 1928–29 period of the race from September, 1928, to June, 1929. In the scores for June we would call attention to the last-minute burst of speed shown by the Fort Dearborn Camera Club. Had this spurt taken place a month or two ago, it is very likely that this club would have won the cup for the second time.

In presenting the scores, according to our records, we wish to thank our friends who have helped us with their support and co-operation during the past year. We now look forward to the 1929–30 race and an even greater number of actively participating camera-club members. Here are the scores:

PHOTO-ERA TROPHY CUP SCORES FOR JUNE, 1929, ONLY

Fort Dearborn Camera Club	7
Seattle Camera Club	3½
Photographic Club of Baltimore	3
Cleveland Photographic Society	2
Brooklyn Institute	1
Chicago Camera Club	1
Syracuse Camera Club	½

TOTAL PHOTO-ERA TROPHY CUP SCORES FOR 1928–29

Photographic Club of Baltimore	37
Fort Dearborn Camera Club	34½
Seattle Camera Club	17½
Cleveland Photographic Society	13½
Brooklyn Institute	13
Photographic Society of Philadelphia	7
Chicago Camera Club	4
Wilkes-Barre Camera Club	3
Syracuse Camera Club	2½
Toronto Camera Club	1
Lansing Camera Club	½

A Good Time to Make Suggestions

MANY of our readers in all parts of the world will be on vacation or traveling overseas during the next few weeks. They will meet interesting people, see new sights, and form new impressions. Moreover, they will hear much photographic discussion and comment. Doubtless they will hear criticism and praise of the photographic press, at home and abroad. There is always room for improvement. There is usually a better way to do this or that, and a better and more helpful way to render service. We are living in a day when changes must be made overnight to keep pace with modern conditions. We ask our readers, as one friend to another, to pass on to us whatever suggestions and comment they believe will help us to make PHOTO-ERA MAGAZINE more interesting, helpful, and inspirational. We are eager to do whatever we can to avoid imitation and to fill efficiently our niche in the photographic world.

We Believe in Curiosity

IT is the practice of many excellent publications to make formal announcements of features which are to be published in months to come. We have done this ourselves on occasion, but not so much as we might. Our manuscript cabinet is full to running over with many splendid articles, written by those who know. We could tell all about them and when each one would be published; but we find among our readers something of the curiosity of a child the night before Christmas. There is something of a thrill or a novelty, if you will, in receiving each issue of PHOTO-ERA MAGAZINE.

THE MONTH IN APPLIED PHOTOGRAPHY

C. B. NEBLETTE, A.R.P.S.
Division of Photography, A.M., College of Texas

The Colorsnap Process

CONSIDERABLE interest, apparently, has been aroused in England over the process of color-photography introduced by Color Snapshots, Ltd. An exhibition held at the Cooling Galleries in London a few months ago was favorably commented on by the press, and finally, after some delay, the materials for the process have been placed upon the market. For the present, the materials for the photo-finishing of the color prints have not been placed upon the market and all photo-finishing is being done by Color Snapshots, Ltd., in their own plant near London.

The Colorsnap process is a development of the tri-pack idea exploited long ago by the Frenchman, Louis Ducos Du Hauron, who seems to have anticipated in one way or another nearly every possible variation of three-color photography. Many older workers will remember the fleeting Hicrome process introduced by the Hess-Ives Company about 1912 as a result of the investigations of Mr. F. E. Ives. Another pack idea, although in this case but two emulsions were employed, was the Kodachrome process introduced about 1914 by the Eastman Kodak Company, primarily for portrait work.

The great difficulty, heretofore, with the tri-pack idea has been the difficulty of securing emulsions of the proper color-sensitiveness and correctly balanced speeds to render the process wholly successful. Formerly, it has been the practice to place the blue-sensitive emulsion in front, followed by the green and red-sensitive emulsions in order. As the front film must be sensitive to blue only, this rendered necessary the use of a chloro-bromide plate of low sensitiveness. Another disadvantage arises from the fact that the loss of definition in the red-sensitive plate, due to the scatter of light in the two emulsions in front of it, is serious, since the red-sensation negative is the basis of the blue-green print and it is the blue-green print which is chiefly responsible for the definition of the finished three-color print. Refinements in the preparation of highly color-sensitive emulsions have made it possible to place the red-sensitive emulsion in front, the green-yellow in the middle, and the blue sensitive in the rear. While, from the standpoint of absolute fidelity in color-rendering, this arrangement is not so satisfactory as the other, it results in a pack with a far higher speed and in improvement in the definition of the finished three-color print.

The speed of the Colorsnap film is approximately 250 H. and D., or only slightly less than that of ordinary rollfilm, so that snapshot exposures become possible for many subjects, thus opening a new field in color-photography. The material is supplied in the form of rollfilms, cutfilms, and plates, and is loaded and exposed in the usual way. After exposure, the three emulsions are separated and developed by time and temperature without any special equipment or attention. It is only necessary to develop the blue-sensitive film a little longer than the other two.

The Colorsnap process has succeeded not only in providing the amateur and professional with a simple means of making the set of three-color sensation negatives without any special apparatus, but it has also been successful in developing a comparatively simple method of producing either contact or enlarged three-color prints from these three-color sensation negatives. The red-sensation negative is used to make a print or enlargement on bromide paper which is later toned blue. Prints or enlargements to the same scale are made from the yellow-green and blue-sensation negatives on two other bromide papers prepared especially for the process and containing a dye which is transferred to the blue-toned bromide print when the two are brought into contact. Thus, when the three prints or enlargements have been made and that from the red-sensation negative blue-toned, all that remains is to bring first the print from the blue-sensation negative and then that from the green-sensation negative into contact and in register with the blue-toned bromide in order that the dyes incorporated in the other two emulsions may be added to the blue record to produce the complete three-color print.

Photomicrography in Cottonseed Oil Investigations

ONE of the major research problems of the Department of Chemical Engineering at the A. and M. College of Texas is an investigation of the various requirements in the production and refining of cottonseed oil. In connection with these investigations it has been found desirable to make a complete and exhaustive study of the structure of cottonseed with a view to determine

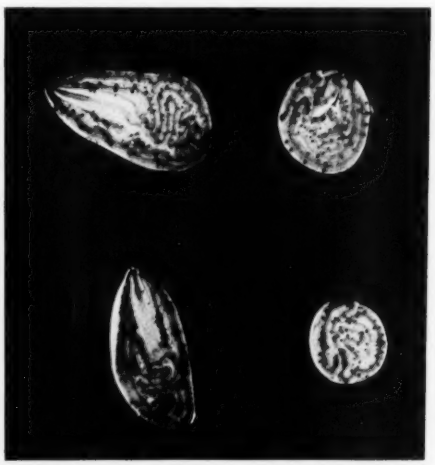


FIGURE 1 C. B. NEBLETTE

Low-power photomicrograph of sectioned seeds of acala cotton

what differences, if any, exist in the seed of the various grades of cotton and in cotton grown under different conditions. Photomicrographs have been made of the seeds of all the main types of cotton and of highland, lowland, and delta cotton. Two low-power photomicrographs of a typical acala cottonseed are shown in Figure 1. While far from complete, the work to date would seem to indicate that no major structural differences exist in cottonseed of different varieties and only slight differences, chiefly in the thickness of the cell walls, in highland or delta cotton.

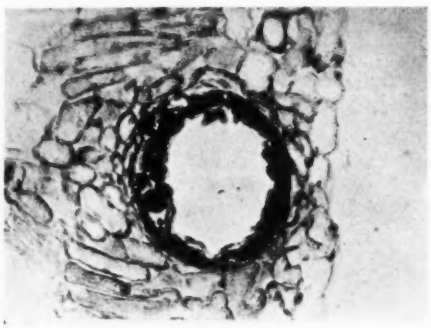


FIGURE 2 C. B. NEBLETTE

Photomicrograph of an oil-sac of acala cotton seed .750X

Other investigations are being made of the cellular structure surrounding the pockets in which the oil is carried in the seed. These investigations are thus far inconclusive. Photomicrographs of the cellular walls surrounding the oil-pockets of various types of seed are being used in an attempt to discover the underlying connection between certain problems of oil production and the character of the seed. Figure 2 shows one example of a large number of photomicrographs by the writer made for the purpose of facilitating the study and comparison of the structures surrounding the oil-pockets in cottonseed.

British Make Record in Picture Transmission

WHAT the World Series is to American sport, the Grand National is to England. It is the general topic of conversation among rich and poor for months until, on the day of the race, enthusiasm mounts steadily to fever pitch. The nation-wide popular interest in the outcome of the race promotes keen rivalry among the various newspapers to be the first in the field with special editions. In past years this has led to the use of special trains carrying improvised laboratories for development and printing of the pictures *en route*. Lately the airplane has been used. This year, according to the *British Journal of Photography*, the photographs of the finish were developed and transmitted by Belin's process of picture-transmission from a specially fitted-up laboratory mounted on a truck placed close to the finish point. In this way all delays due to the crowd, congested highways, and the like, were avoided and photographs of the finish were in the hands of papers in Glasgow, London, and Paris twenty minutes after the winner had crossed the finish line. The *Manchester Chronicle* was able to issue its special illustrated edition of the race in less than an hour after the finish. The reproductions accompanying the account in the "B. J." appear to be excellent examples of electrically transmitted pictures. While the first attempts at picture-transmission were made in England over three-quarters of a century ago, and an Englishman, T. Thorne Baker, was one of the pioneers of picture-transmission, America, Germany, and France all preceded England in the matter of commercial development, and now the process that scores a triumph in what may be called the home of picture-transmission is the work of a Frenchman.

Third Dimension in Colored Talkies (?)

BY a series of new inventions that emphasise the screen and simplify the process of color-photography, the third dimension in colored movies seems assured. With it will come a perfection in the colors, and unimpeded speech for the "talkies".

Within a short time the reality of these dreams will be demonstrated in Boston to a small group of invited guests whose judgment the inventor values. He has subjected his ideas to the searching tests of the Paramount laboratories at Long Island, but until now has made no announcement of his revolutionary process of picture production in colors. These inventions depart from all conventional lines in that they treat as being important an adjunct that heretofore has been assumed to be almost unrelated to the quality of motion-pictures. Inventors in the past have sought to build all the technique into the camera and the projector, but Watson Hartley of Boston arrived at the conclusion that the major share of what remained of shortcomings in the production of motion-pictures was due to the failure of the screen to reflect the image accurately in its true colors and its three dimensions.

"The screen transforms everything", he said. "It is the salesman of the picture, the final test of values. When images were first projected by the magic lantern, in the year 1646, long before photography was even dreamed of, the discoverer, finding that the bare wall of his room did not reveal a satisfactory picture, looked around for something more suitable and took a white cloth lying on the table, and that poor device has continued in substantially the same form down to the present time. No director has ever yet seen on the screen a picture which was a faithful reproduction of the scene he had before him when the cameramen were at work, simply because the white silver screen is incapable of reproducing the composite pictures of light-and-dark areas.

"It may seem daring to suggest now, after thirty years of continuous experience with the white screen in motion-pictures, and a previous experience extending over 250 years with the magic lantern and kindred devices, that the white screen is fundamentally wrong. That, however, is the fact which has to be faced. Common sense suggests that the white surface cannot properly produce a composite picture any more than a black surface could reproduce the same picture, as there can be no balancing of the spectrum colors. It will reveal a picture, but not the picture of the negative."

(*To be concluded in September issue.*)

Short Focus

"WHEN I was in China, I made a picture of a woman hanging from a tree."

"Shanghai?"

"Oh, about six feet."

Exchange.

THE PICTORIAL EDUCATOR

ARTHUR L. MARBLE

Communications intended for the editor of this department should be addressed to him, at Utah State Agricultural College, College Hill, Logan, Utah.

A Field for Research

PROBABLY every State in the Union offers a fruitful field for research in visual education. Particularly is this the case in those sections of the country where little or nothing of this nature has been carried on. It is apparent that before much can be done to advance pictorial education, somebody must discover the possibilities—must ascertain how many schools are employing visual methods and to what degree, also determine the obstacles standing in the way of their use.

There are two chief methods of obtaining such information—personal visitation and the letter questionnaire. The research worker can visit all the schools in his region, interview officials in charge of pictorial activities, and record his findings. This procedure has the advantage that the investigator is likely to get more or less complete replies to the queries propounded. In personal interviews it is not so easy for an official to dodge the issue, or fail entirely to respond, as is so often the case when the questionnaire-method is employed. On the other hand, a great disadvantage of personal interviews is the vast amount of time it requires; for be it known that hours printed on office doors are Great American Myths, especially during the golf-season. Then too, many busy people abominate granting interviews even more than they dislike answering letters.

Most educators are so familiar with questionnaires that to mention them is to run the risk of being considered a bore. Questionnaires may, however, be so prepared that they are economical of time, especially when one desires a brief, comprehensive, bird's-eye view of the situation. But to plan a clear and definite inquiry is no easy task, as your correspondent has found from experience. From the point of view of the tabulator, the most worth-while inquiry is one that may be answered in the fewest definite terms. If the questionnaire is such that a recipient can reply "Yes" or "No" to most of the statements, the total replies will be easy to record. Further, a list of questions must not be too lengthy. I doubt if any general investigation can surpass the limits of a single typewritten page without sorely trying the patience of somebody. This means that the student must content himself with asking a few of what he considers the most pertinent questions.

The first step in delving into the visual lore of a State is to make a thorough examination of available literature—not overlooking city libraries, college and university archives, and the State education association. If it is found that little survey work has been carried on within a period of several years, there is certainly a chance for profitable investigation.

Often an institution of higher learning, or a State education association, or both, finds it feasible to co-operate with a research worker on the trail of useful knowledge. So it was in an investigation I recently conducted in my own State, Utah. The Department of Education of the Utah State Agricultural College aided in preparing a tentative questionnaire which was submitted to the Research Division of the Utah Education Association; where it was felt that the prospective results of such a study would justify the Association's bearing the expense of multigraphing copies of the questionnaire and mailing them to all high school principals in the State. A copy of this investigation, with all its imperfections, may be of some value as a suggestion to other workers; so it is given below:

UTAH EDUCATION ASSOCIATION

Office of the Executive Secretary
316 Vermont Building
Salt Lake City

Questionnaire No. 21, Having to Do with Visual Education

Please place "Yes" or "No" in each of the following blank spaces, as the proper answer may require:

1. Are you using in your school (*a*) motion pictures? *Ans:*..... (*b*) Lantern slides? *Ans:*.....

2. (*a*) Have you lantern-slide equipment? *Ans:* ..... Please give make of machine in this space: ..... (*b*) Have you motion-picture equipment? *Ans:*..... Please give make of machine in this space:.....

3. Do you use lantern slides regularly during (*a*) regular assembly periods? *Ans:*..... (*b*) In classroom teaching? *Ans:*.....

4. Do you use motion pictures (*a*) daily? *Ans:* ..... (*b*) Several times weekly? *Ans:*..... (*c*) Daily in classroom instruction? *Ans:*..... Kindly give approximate number of times films are used monthly in this space:.....

5. Before showing pictures to the students, are the films regularly previewed by the instructors? *Ans:* ..... Are they previewed occasionally, but not always? *Ans:*.....

6. Is the subject of the film regularly discussed with the students before showing? *Ans:*..... Is it discussed occasionally but not always? *Ans:*.....

7. Is the film lesson followed with a discussion? *Ans:*..... With a review test? *Ans:*..... If any other method is used, please explain in this space:.....

8. Do you show entertainment films? *Ans:*.....

9. If you exhibit entertainment films, do you show them daily? *Ans:*..... If not daily, do you show them oftener than once a week? *Ans:*..... About how many times do you show them yearly? *Ans:*.....

10. In case you do not use motion pictures or slides, is it due to the expense? *Ans:*..... Or is it due to no demand from students? *Ans:*..... Or to no demand from teachers? *Ans:*..... To no demand from parents? *Ans:*..... To no demand from the school board? *Ans:*..... Or to lack ofsuitable films? *Ans:*..... Or slides? *Ans:*.....

11. Kindly write remarks, if any, on back of this sheet.

High School:..... District:.....

Principal:.....

National Academy of Visual Instruction

It gives me great pleasure to call attention to a nation-wide association of leaders in the move for pictorial education, namely the *National Academy of Visual Instruction*, composed of men and women who have organised for non-commercial reasons. "Bring the World to the Learner" is their slogan. The present officers of the Academy are Arthur V. Balcom, Newark, N.J., president; Lelia Trolinger, University of Colorado, vice-president; Ellsworth C. Dent, University of Kansas, secretary-treasurer.

Purposes and ideals of this organisation should be of interest to every reader of this department, and many will perhaps wish to affiliate in membership. We therefore turn to the *Bulletin of Information*.

What the Academy Is

The National Academy of Visual Instruction is an organisation interested in a wider, more intelligent, and more systematic use of visual aids; in short, in the development of visual instruction as an art and science.

The Academy is not engaged in promoting visual instruction commercially. Active membership and the control of the Academy and its actions are vested solely in those who are engaged in educational, semi-educational, or welfare work, and who are actual users of or are directing the use of visual aids for instructional purposes.

As stated in the Constitution of the Academy, the purpose of this association is to establish and maintain an organisation through which schools and other educational institutions, churches, parent-teacher associations, clubs, welfare organisations, and societies engaged in educational or semi-educational work, may co-operate in furthering better production of and a more systematic and intelligent use of visual aids, such as lantern-slides, motion-picture films, charts, art-collections, exhibits, and models; to prosecute research in visual instruction-methods; to investigate sources of supply; to establish a clearing-house of information; to devise methods of co-operative buying and bargaining; to work out standards of method and practice, and to promote the knowledge and use of better films.

History of the Academy

The Academy had its beginning in a conference of between forty and fifty educators at Cleveland, Ohio, in February, 1920, at the time of the annual meeting of the Department of Superintendence of the National Educational Association. As the result of an enthusiastic and deliberate conference, a committee of nine was appointed to take the necessary preliminary steps in organising an association. This committee met at the University of Michigan, April 7, 1920, drew up a constitution and by-laws, and completed an organisation which was named the National Academy of Visual Instruction. A meeting of the Academy has been held each year, and the present plan is that it shall be held concurrently with the annual meeting of the Department of Superintendence of the National Educational Association. The membership has varied from year to year, with an average annual membership of one hundred members, and with numerous associate, contributing, institutional, and honorary members.

Future Plans of the Academy

It is planned that the Academy will encourage research in methods of visual instruction and that it will make the results of these experiments available to all Academy members as well as to any others who may be interested in the field. One study of great importance is practically completed and will be published within a year. Outstanding achievements in methods of visual instruction will be given publicity among the various members of the Academy and will be offered to magazines for publication.

A central office has been established, and it is hoped that this office will be able to give prompt attention to all inquiries directed to the Academy. It shall be the duty of this office to handle the publication and distribution of the Academy studies and to co-operate with all members in securing information from or in giving information to other members. The central office will keep a complete record of all active, associate, contributing, institutional, life, and honorary members of the Academy.

It is hoped that the central office will be able to collect and disseminate information concerning new offerings in the field of visual instruction and that it may serve as a clearing-house of services as well as ideas. It may be that some collective purchasing of visual instruction materials can be arranged through the central office of the Academy. In that case, all active members of the Academy will be eligible to participate in securing such benefits.

The five regular types of membership, active, associate, institutional, contributing, and life, range in annual cost from $3 to $1,000. Further information and membership application blanks may be obtained from the Office of the Executive Secretary, 1400 Oread Avenue, Lawrence, Kans.

Down Memory's Lane

In the somber stillness of the late December twilight, the trembling old man fumbled his way to the far corner of the great, dark attic and from a musty old trunk drew falteringly forth a package of photographs. Pressing the photographs tenderly in his hands he sighed. For, anyway, *she* had loved him in those years ago, the years when youth was glorious, was at its noontide, when the stars were but an arm's-length away. Memory—sweet and faithful mistress—and these old photographs—how they recalled those happy days when time meant nothing and the future was but a dream apart!

The old man fumbled for his spectacles. Alas! he had left them below—surely a sign of advancing years. Without them he could not enjoy the photographs as he was wont to do when the Past called and he was able to climb the stairs. But, instead, he kissed the little package and, unseen by anyone save God, a tear dropped upon the dull floor of the now completely darkened attic. Another tear—and a sob—and then the sound of a closing trunk.

He could not see that he had opened the wrong trunk by mistake and that the packet which he held reverently in his hands was merely a bundle of pictures of long dead aunts, uncles, second-cousins, and—horse jockeys.—Ralph D. Hartman in *Thru the Darkroom Door*.

Lecturing at Smith College, Dr. Rufus Jones said: "The scientist knows more and more about less and less; so that in the end he knows everything about nothing. The philosopher knows less and less about more and more; so that in the end he will know nothing about everything." We can get the words all right, but will the Doctor please hum the air again?

The Boston Mail.

LONDON LETTER

CARINE AND WILL CADBY

We have two friends belonging to the younger generation, both girls of good education, who have adopted photography as a profession. One seemed to have all the advantages. She started with a studio in the busiest street of a rich and residential city; she had the most modern and luxurious appliances, with every convenience for artificial and daylight portraiture, and had the distinction of being the only woman-photographer in the place. Naturally, she made an excellent start and soon earned a reputation for lifelike child-studies.

All good so far; but there it seemed to stop. Somehow, instead of sitters increasing as the time went on, she was evidently "enjoying" more and more leisure, while the photographs in her showcase did not vary. When chatting to her last week, she complained of bad times; no one seemed to care about being photographed now, and, added to this depressing fact, competition had grown particularly fierce. Indeed, women-photographers had opened studios in every street!

Our other friend, rather young, works under the handicap of living at home and in the depths of the country. She took a course of training in the technique of photography at the Polytechnic in Regent Street and has now been on her own for about six months. She is already busy and her scope is widening and her jobs increasing. She has surprised her own people by refusing portraits, or, rather, agreeing to do them only as a sort of "side line" when she has no other work on hand. Her first commissions were the photographing of some valuable old furniture and some prize Alderney cows. "Think how much easier than portraits", she said. "Cows are not going to bother me afterwards that I have not caught their exactly correct expressions, nor will the chairs have anything to say in the matter!" What wonderful wisdom in one so young, we thought; for although we have always found portraits most interesting, we must own that it would be almost an ideal occupation if only one did not have to hear the sitters' remarks!

But now for the point of our little story. Naturally, it is that photography is such an extensive and large-hearted profession, offering such unlimited opportunities, that no photographer need be idle. We should like to rub this fact into our first friend, for it seems such a waste of time and opportunities to sit waiting for sitters who do not materialise, when, just across the road, is a big store needing this girl's skill and experience to advertise its goods, and with mannequins waiting ready to pose as models. Also, with all the latest equipment for up-to-date artificial lightings, how easy to do some illustrations for magazine-work! And how profitable, too!

Of course, it is just a case of individuality. We might quote Maeterlinck, substituting "jobs" for "joys", and say: "Only those that have been offered to all, and which none have accepted, will knock at his door who refuses himself to stir forth." Our American readers have no doubt much more telling expressions for what we in our old-fashioned way should call energy and enterprise; for when it is a case of the most elaborate, modern, and expensive conditions against character, it will always be character that wins.

The General Elections have come and gone, and the country seems in no way perturbed at the result—a Labor Government. Here, in Dorset, one of the strongholds of Conservatism, from extended inquiries during the election, we found the working-classes—mechanics, postmen, and even agricultural laborers—quite sympathetic and attentive to the young Labor candidate, who took on the forlorn hope of converting the division. He failed, but he secured a fair number of votes and no doubt paved the way for a future victory.

We cannot help thinking that when Labor or Socialism—call it what we will—have gained a clear majority of the electorate, they will have embraced so big a proportion of the population that is steady, non-aggressive, and fair in its outlook, that it will outbalance the extreme left and compel only peaceful, progressive, and reasonable legislation.

We apologise to our readers for this digression, but it paves the way for a notice of the use Mr. MacDonald, the new Prime Minister, has already made of photography. Before the new Cabinet held its first meeting, a talking film was made on the balcony of 10 Downing Street, the historical residence of Prime Ministers. Mr. MacDonald introduced each member of the Cabinet, saying a few words about the part he was to play in the Government. He described Miss Margaret Bondfield, who is to be Minister of Labor, as a "double first"—the first woman Cabinet Minister and the first woman Privy Councillor—an innovation that only the Labor Party would dare to have made. This film is, of course, being shown at the motion-picture theaters and cannot fail to impress the public and familiarise it with the new ministers, many of whom earned a character for hard and conscientious work in the short-lived Labor Government of a few years back.

Mr. Penrose, a young American living in Somerset, has given £1,000 to the Council for the Preservation of Rural England. He has done even more, for he has promised up to £10,000 in proportion to other help offered within the next two months. This should be a stimulating challenge to English people, and will no doubt be the means of much enlarging the activities of the Council. When we think that a stranger, who can hardly share our old associations with the countryside, sees so vividly the necessity of action for the preservation of rural England, it will surely act as a stimulant to us.

There is no doubt that the "Exhibitions of Horrors" that have been traveling all over the country are doing good in making *local* people realise the enormity of some of their new buildings. And, unfortunately, it is mostly the local people who are doing the harm—alas! all unconsciously—by putting up the most unsuitable structures wherever they think a little money can be made out of the passing tourist or motorist. We heard the other day that the surprise of some Cornish villagers was unbounded when a visitor expressed disapproval of a spate of box-like bungalows that they had proudly built in among the old fishing-cottages of a cove famous for its beauty. It will take some time for the lessons of the photographic exhibitions to permeate these natives; but, at all costs, they must be converted.

HERE, THERE AND EVERYWHERE

To ensure publication, announcements and reports should be sent in not later than the 5th of the preceding month.

A Little Boasting and a Welcome

LONG known as the seat of culture in America, sometimes called the "Athens of the U. S. A.", Boston upholds its traditions as the seat of learning and art in many ways. For example, what city of like size can boast of five camera clubs?

First, we have a Lens and Brush Club. This organization is open only to studio-owners and is under the guidance of our honorary member, John Garo, who needs no introduction. His reputation for artistic ability, not only along studio-lines, but as a maker of gum prints that are purchased by art clubs and museums, is international, and, under such a leader, the Lens and Brush Club is leaving an indelible impress on professional studio-photography.

Second, there is the Society of Arts and Crafts, whose members make jewelry and silverware, carve wood, hammer iron, and make and decorate pottery and china. The needle-workers and basket-makers, bookbinders, and leather carvers have a Photographic Guild, which meets once a month to discuss one another's photographic efforts. These discussions are very nice. The hammer is made of rubber and is well padded. No doubt it is the presence of the gentler sex that makes the constructive criticism so very soft and velvety! The Photographic Guild, in common with most of the others, is an orphan. It has no real home.

Third, in Roslindale, one of our suburbs, there is a group who meet at one another's homes to discuss the "hobby of hobbies".

The City Club, one of Boston's largest institutions, with a membership of several thousand, has recently added a camera club to its activities. The members have the use of a room and meet monthly to discuss one another's pictures. They have no facilities for photographic work, unless the wall-space for hanging prints and the usual constructive discussions of said prints can be termed equipment.

The old Boston Camera Club has recently come to life after hibernating for about fifteen years. The miracle-man who is attempting to resuscitate this long-dormant association is Frank Roy Fraprie, F.R.P.S., and we wish him all the luck in the world.

If he can get a few men and women to work with him, he will put it over. Not that I am a pessimist, but my years of camera clubbing here and in other places have convinced me that 95 per cent. of club members are sponges. They absorb only, and give off nothing but dues when squeezed; and they are too busy to do anything for their club except find fault with the officers and committees. The Boston Camera Club has possibilities, if Mr. Fraprie can persuade enough members to put their shoulder to the wheel and get out of the rut. They are at present with the orphan class—no home.

I hate a braggart, but here are some cold facts: The B. Y. M. C. U. Camera Club is self-governing and self-supporting, operating under the roof of the Union, but with free rein to do what it pleases, make its own rules and regulations, and so on.

We have three enlarging-rooms equipped with sinks and running water, three 1,000-watt lights, two with condensers and one with parallax. Negatives can be enlarged to any size—the only limit being the financial-status of the operator. We have trays and printing, frames from 4 x 5 to 30 x 40, and everything in between, and lots of them.

Graduates for the "C. C." user are all sizes, and the same for the "ouncer". There are drying-racks and electric fans; dry-mounting press and ordinary presses; trimming boards with knives up to 24 inches, retouching-desks, plate-racks, and a barrel of hypo marked "Help Yourself".

We have four modern printing-machines, and at every machine are the necessary trays, graduates, and so on. There are four darkrooms, all with sinks and running water, plus trays and graduates. All of these rooms have the necessary safelights, and the darkrooms have a choice of lights—for pan-workers, color-plate makers, and so forth.

Our studio is large and has a dressing-room. There is an up-to-date studio-camera, 8 x 10, with reducing-back for 5 x 7. There are plate-holders of both sizes; backgrounds of plain white, black-and-gray, and mottled effects; two reflectors, one brilliant, the other soft; three various flexible screens for shading or diffusing the light, a choice of three types; three 1,000-watt lights, all movable, and two spotlights of 500 watts each. There is a battery of lenses varying in sharpness and focal length.

We have a large lounge and library; all the photographic magazines, domestic and foreign; all the annuals printed here and abroad; photographic magazines for the past twenty years, uniformly bound year by year; encyclopedias, reference-books, and a dictionary for the cross-word puzzlers. (Yes, we have a few addicts left!) Our walls are equipped for hanging traveling camera-club exhibits or one-man shows. And, above all, there is "Good-Fellowship." No social lines are drawn and no financial ones.

All this is possible for $10 per year. How? Yes, we buy and pay for everything we have, including tons of water and watts and watts of electricity. Our location is right in the very heart of Boston. From our windows we look down at our busiest corner with its flashing "Stop" and "Go" signs, and beyond is the historic Common.

We pay no rent! No, we don't move every year—it would cost too much for rewiring and for reinstalling eight or ten sinks. Plumbers are also artists and charge as such.

Thanks to the B. Y. M. C. U., to which all of us belong, we have an entire floor in its building. Yes, it is under lock and key, but all camera club members have one. So don't walk a mile for a camera club! We welcome new members. We are easy to get acquainted with. No formal introductions are necessary. Come in any time!

If you don't own a camera and are curious to see what funny fellows we are, you are welcome; and if you have a photographic problem, come up and see us! Some one of our members will know the answer and be glad to give it to you.

Special welcome to members of the Associated

Camera Clubs of America and the Royal Photographic Society of London, with whom we are affiliated. Our latch-string is out.

GUS SEELIG, in *Highlights*.

Airplane Photography

CONTRARY to general belief, neither extreme shutter-speed nor extreme lens-speed is necessary for the making of successful pictures from the air, and good pictures can often be made even with the low-priced box cameras.

To secure the best possible results, panchromatic emulsions and the proper filters, such as Eastman's Aero No. 1, should be used. When an ordinary roll-film camera is used together with the ordinary roll-film, no filter should be used, as the use of a filter will flatten contrasts too much.

Except when within a few hundred feet of the ground, a speed of 1/25 or 1/50 of a second, preferably the latter, will often be sufficient, especially when the camera is being held at an angle of about forty-five degrees. When the plane is close to the ground, much higher speeds are necessary; but as few pictures are made when the plane is low, the lack of a fast shutter will be very little handicap.

In most instances the same exposure as given for distant landscapes and for pictures over the water is the one to be given for aërial snapshots. Here, in Central California, an exposure of 1/50 of a second at F/16 at about noon, on an ordinarily bright day, and a speed of 1/50 of a second at F/11 at about 10 A.M. or 3 P.M., will be sufficient. On very bright days, one stop smaller should be used; and on dull days, or earlier or later in the day, larger lens stops should be used.

The view finders found on most cameras are of very little use. If not already fitted, a direct-view finder of some kind should be fitted to the camera; or, if one does not wish to go to that expense, a small mark of some kind put on the side of the camera front, parallel to the center of the lens, together with a similar mark placed on the side of the back of the camera, centered with the center of the film or plate, can be used. With the camera so marked it can be held level with the eye and the two marks can be lined up with the center of the view to be photographed, somewhat in the way a direct-view finder is used.

With reflex cameras it is hopeless to try to use the focusing-hood when photographing from an open plane. The best method is to equip the reflex with a direct-view finder and with some device to lock the camera in focus. It would then be possible to focus the camera on some object at infinity while still on the ground, then lock it in focus, close the focusing-hood, and use the direct-view finder.

On cabin-type planes it is usually possible to open the windows, and, unless the camera is held too far out, the focusing-hood can be used in the usual manner. If the windows cannot be opened, pick out a clean section of the glass, one free from defects, and shoot right through the glass.

In shooting from any open plane, or from a closed plane when the camera is held out of the window, it is best to have a good strap on the camera, the other end to be hung around one's neck or fastened securely to a part of the plane, and it is also good practice to have a piece of twine or chain fastened to any filters or other attachments which might blow off, the twine or chain being fastened to the camera or to the strap holding the camera.

On short sight-seeing flights, as time is usually short, it is best to have a fresh roll of ten or twelve exposure film in the camera when roll-film is used, as it is usually somewhat difficult to change rolls while in mid-air, especially in an open plane.

In photographing another plane from a plane, if the other plane is moving in the same direction as your own plane, no very great shutter speed is necessary to stop motion; but if the plane being photographed is moving in the opposite direction, or if it is fairly close, considerable shutter-speed is necessary.

Also watch out for struts and wires and see that they don't cut across your picture, as it will usually mean an out-of-focus blur across a picture which might otherwise be good; and don't rest the camera on the side of the plane or against the window-frame of a cabin-type plane, as the vibration may blur the picture.

When panchromatic films or plates with or without a filter have been used, develop the negatives with the developer recommended by the manufacturer of the emulsion. When ordinary rollfilm, filmpack, or cut-film, or any other orthochromatic or color-blind emulsions have been used, develop your negatives with a "hard-boiled" developer—that is, with one which will give considerable contrast.

KARL A. BAUMGAERTEL in *The View Finder*.

Photographic Art in the Pittsburgh District

THE major photographic activity in this district for many years has been that of the Photographic Section of the Academy of Science and Art, which sponsors the Pittsburgh Salon, one of the oldest exhibitions of international scope in the United States. The local organisation is a member of the Associated Camera Clubs of America and is affiliated with the Royal Photographic Society of Great Britain.

This Photographic Section was formed in 1900 and has lived through the coming and going of the different schools of our art. Several other clubs or associations were born, but are now inactive. From 1900 to 1915 the pioneers worked hard in the face of much opposition. The history of those fifteen years would make interesting reading, especially for the older workers—but the readers of *Light and Shade* want to know what is going on now.

The big task being performed here is that of the "Pittsburgh Salon", whose Sixteenth Annual Exhibition —1929—has passed into history. The aim of this group is to show the very best possible work, and it has earned an enviable reputation for the high standard maintained. Pittsburgh has an advantage over most cities in North America, in that it has at its disposal the magnificent galleries of Carnegie Institute in which to present the work. The air of dignity which these galleries give is a considerable asset. The Salon is open free to the public daily and Sunday for four weeks, having about ten thousand visitors each season, who come from near and far.

For several years, pictorialists from New York, Philadelphia, Baltimore, Chicago, Cleveland, Columbus, and Akron have organised excursions to visit the Salon. The Pittsburgh Salon rivals in public interest the International Salon of Paintings and the annual exhibition of the Associated Artists of Pittsburgh.

Baltimore has an active camera club as well as a number of independent workers who exhibit regularly at American and foreign salons.

Philadelphia has two active camera clubs whose members are successful, their names appearing in the catalogs of the best-known salons. Local and traveling exhibitions are regularly shown in the club rooms.

The Cleveland Camera Club, which issues the well-known publication, *Thru the Darkroom Door*, has the largest membership in this district. It is very active,

both socially and in pictorial work. Cleveland also boasts of several well-known independent workers.

Cincinnati, Akron, and Columbus, Ohio, also have active camera clubs, whose members are recognised pictorial workers.

Wilkes-Barre, Pa., has a live camera club and some well-known pictorialists, whose names appear in prominent salons.

Not being familiar with the Southern and Western territory and having consulted the Directory of Camera Clubs in the late issue of the *American Annual of Photography*, I find clubs listed at Charleston, S.C., Dallas, Tex., and Carlisle and Reading, Pa. The P. P. A. would especially like to hear from these workers.

At this time there seems to be a continuously growing interest in photographic art in this district.

O. C. REITER in *Light and Shade.*

Juryslammania Photographica

RECENTLY, I observed a form of cerebral "diffusion" among pictorialists which should, for the welfare of humanity at large, be recorded.

The vast majority of camerists are mentally normal and splendid individuals. There are some, however, who periodically become afflicted with an acute form of "brain storm", for which I have coined the name "juryslammania". The malady may be sporadic. Often it becomes manifest in an epidemic form, particularly at the period when salon-catalogs are issued. It affects both sexes, the male contingent being preponderant. The symptoms of the disease are characterised by outbursts of mud-slinging against juries, by explosive remarks about the inferiority of those passing upon salon-prints, and by symptoms of delusions of grandeur about one's own pictorial prowess.

The period of incubation of the disorder begins at the time when entry-forms are filled. The first outburst of symptoms is usually observed when the "masterpieces" are returned, *not accepted*. On that day the victim usually becomes depressed and introspective for a short period, and then, without warning, the violent symptoms burst forth. At this period his facial expression is best described, perhaps, as "disappointed goofiness". His mate usually scents the oncoming brain storm and knows pretty well what the prodromes are. Tempered by experience, she strokes him gently on the forehead, toys with his disheveled locks, and agrees with him in *everything*. She decisively seconds his firm belief that jurors are numbskulls, ignoramuses, pictorial politicians, etc., etc., etc. This usually has the desired effect and quiets the symptoms, temporarily at least. The period of greatest violence, however, reaches its peak when the "goof" meets others similarly affected. Then the fireworks are on. A Bolshevik meeting is a Sunday school compared to the racket they stir up. The collapse of the Babylonian tower raised no such commotion. Climax: They all agree, embrace, weep, and make resolutions. It matters not what kind of resolutions, but they resolve.

The treatment requires careful supervision, the underlying principle being decisive "cerebral redeveloping" and "mental retouching". Above all, do not allow fountain pens, pencils, or typewriters in the room of the patient. They are dangerous weapons. If the jury-slammer gains possession of such, he will invariably begin on a tirade of mud-slinging against the juries of the last salon whence his prints promptly excursed. On the other hand, a shotgun, potassium ferrocyanide, or any equally destructive poison, is perfectly permissible. You may entrust them to him. He won't hurt himself. None of these bugs have ever been known to wrap a focusing cloth around their necks and commit suicide. As a matter of justice, it is advisible to furnish them with these implements and see what will happen. Isolation is often imperative. It is a good prophylactic. If the "slammer" gains freedom, he will often escape and slam the salon against which he feels most keenly. The hell-gates of "slamming" are then furiously opened once more and inevitable harm ensues. Those who are curable may be brought back to their senses by having the patient repeat, with fervor, every two hours:

Juries are composed of normal, well-meaning, good fellows, who are endeavoring to do their best. They are not infallible. They mean no harm. They are of mortal flesh, even as you and I. I shall learn to respect their judgment. I shall train myself to unequivocally abide by their decision in the future. I shall take their verdict without a murmur. Prints that are returned to me, "Not accepted", I shall study. I shall shelve them, and endeavor to make better ones, so help me God. Amen.

DR. MAX THOREK, A.R.P.S., in *The Exposure.*

"Memo Finishing At Home"

WHEN the Agfa Ansco Corporation put the Memo camera on the market, it filled a need. These little cameras which made still pictures on a roll of standard motion-picture film were, indeed, photographic memorandum books for their owners. Soon after Memo cameras became popular, there arose a demand from those who wished to finish their own rolls of film at home. Equipment was designed especially for Memo photo-finishing, and now we have a booklet, "Memo Finishing At Home", which tells all about the Memo printer, enlarger, and developing machine, and adds a fund of practical and interesting information on how to use them all. Owners of Memo cameras and those who are interested in still cameras which use movie film will find much of value in this new booklet, which will be sent to any address by writing to the Agfa Ansco Corporation, Binghamton, New York.

Two Addresses Wanted

FOR the past month or two we have been trying to locate Mr. Earle K. Foreman whose address we had as Box B, Jerome, Ariz. From notations on the returned envelope the letter was forwarded to San Francisco and then to Hollywood, California, but without finding him. Then, too, we have been trying to find Mr. Irving Bruce Wellcome, United Hospital, Port Chester, N.Y. Both gentlemen contributed articles to our pages and our letters contained cheques in payment. If any of our readers can help us to reach these contributors, we shall appreciate it.

Old Covered Bridges

MR. LAWTON H. FORD, 175 Eastern Parkway, Brooklyn, N.Y., is gathering material on covered bridges in all parts of the country. He wants a good picture, the location, name of bridge, river, span, and other data, historical and otherwise. He is willing to pay from $3 to $10 for each satisfactory photograph. All unacceptable prints will be returned, if return postage is paid by sender. Prints need not be mounted. Mr. Ford is looking for truly pictorial material which combines artistry with accuracy. We believe that many of our readers can supply satisfactory pictures of old covered bridges and we suggest that they get in touch with Mr. Ford and find out more about his needs.

Amateur Movies Twenty Years Ago

THE "I remember whens" are none too popular these days; no one wants to listen very long to tales of things that happened when some fellow was a boy. We are too rushed with eight thousand other things that need our immediate attention. And yet, it is, perhaps, interesting to look back about twenty years and see what the amateur "ciné" photographer was doing at that time. I said twenty years but maybe it is longer ago than that, anyhow—

My elder brother brought back with him from England a most interesting looking box of a movie camera. It was of polished mahogany and about seven by four by three inches. Out of the right side projected a crank; on the bottom was a tripod socket; and the sliding of a small door in front disclosed a lens. The box opened on well-made piano hinges and when you opened it the mechanism was revealed. The thing was simplicity itself. You loaded about twenty-five feet of film into a light-tight cardboard box, slipped through a gate making the usual loops top and bottom, attaching the end of the film into an empty box at the bottom. Sounds like loading a "Filmo" or "Ciné Kodak", doesn't it?, sounds like it, but it wasn't. There were differences, many of them. You loaded it, I have said. You did that if you had fingers as thin as a pencil and a touch as sensitive as Jimmy Valentine at his best—otherwise,—otherwise you learned to swear mightily, for the simple mechanism was about as simple as a linotype machine.

If you started on Thursday you would get it loaded in time to use over the week-end. And when it was all set and ready you would get sister Sue and Annibel Lee (who wasn't your sister at all, but somebody much nicer than any sister could possibly be) to pose for you, as did Chuck, your big Newfoundland pup, and other dogs, cats, birds, and rabbits; for all of this took place out in the country where there was plenty of "screen" material at hand. You had a fearful time cranking the thing—I mean the camera, of course—for it operated with an insane jerky motion that made the tripod wobble and caused beads of perspiration to collect on your brow.

You then developed the film yourself as well as printed the positive, using the camera as a printing machine by opening a door at the back and threading in two thicknesses of film, negative and positive, into a space you knew was miles too snug for one thickness alone. But you did it just the same because you were enthusiastic. For light there was an ordinary incandescent bulb of about sixteen candle power and you guessed at the necessary exposure. Your first guess was wrong, of course, as the first lot of pictures were a total failure. You then made another guess which came out better; you thought they were perfect. Twelve hours after development the strip was dry and ready for projection. Here again the camera was pressed into service and the pictures thrown on the screen, using the camera as a projector. The light was poor, the pictures were jerky and some of them looked as if they had been walked upon by the subway jam at Forty-second street and Broadway at rush hour. Spots, streaks, hair lines, blotches and what not—*BUT* they did *MOVE*, and that, after all, was the main objective.

Experiment improved things; we got so expert that we could make a picture of one of our friends which, when projected on the screen, *LOOKED* like that friend. We "shot" everything that walked, ran or crawled. Swimming was omitted because the film suddenly gave out. That was a major calamity and no mistake, but it did not down us. We sent over to England for more film. Nine weeks later it arrived and more experiment proved that the new film was ruined by dampness acquired in transit. What to do—that was the question, then a sudden inspiration; we would take standard film, which could be purchased in long rolls, split it into three strips and perforate it, to fit the gauge of the tiny machine.

You have all heard of Mr. C. Francis Jenkins, he of Television fame,—well he saved the day for us. We wrote him to at Washington and put our problem up to him and darned if he didn't make us the cutest little splitter and perforator you ever saw. And it worked perfectly, too, splitting standard film into three strips that looked for all the world like grandma's home-made noodles. With this machine we could split and perforate one hundred feet of standard film in no time. A plentiful supply of film assured we now ventured into the realm of "high art" and stunt stuff. Oh, we were ambitious in those days and we used the little English camera until the Pathescope camera was brought out and then, but that's another story.

Now, when we pick up our dinky little movie with its perfectly balanced mechanism, its smoothly running clockwork motor and its perfectly matched view finder, we marvel at the strides that have been made in amateur movies in less than a decade. Who, in those dim days just after the close of the "gay nineties" would have believed such things could happen. Do we get any more "kick" out of the projection of today than we did from the heartaches of those days?—I wonder. One thing, we do not swear as much as we did then, and that, after all, is a gain.

HARRIE V. SCHIEREN in *The Groundglass.*

Photography in Boston

WITH the resurrection of the Boston Camera Club, there are now six photographic organisations in Boston, including our own B. Y. M. C. Union Camera Club. The others are the Photographers Guild of the Society of Arts and Crafts, the Lens and Brush Club, the Camera Clan, and the City Club Camera Club.

Highlights.

Alexander Leventon Arrives From Rochester

DURING the past few days, as this issue was in preparation, we had the pleasure to welcome a number of visitors. Among these our readers have heard of Alexander Leventon of Rochester, N.Y. He came to see us last year and liked Wolfeboro so well that this year he brought Mrs. Leventon with him and so we had the pleasure of welcoming two instead of one. It will be recalled that Mr. Leventon is Concert Master at the Eastman Theater and a pictorialist whose work has been accepted by the leading salons. Moreover, he has a studio of his own in which he has photographed many of the leading men and women in the Kodak City. Even Mr. George Eastman himself has been one of Mr. Leventon's distinguished subjects. Needless to say, we found much to talk about and Mr. and Mrs. Leventon's visit to Wolfeboro was all too short. May both be with us again, and for a longer stay.

Joseph Hammele

IT is with regret that we announce the death on July the second of Joseph Hammele, director, sales manager and an associate of the business of the Bausch & Lomb Optical Company, Rochester, N.Y., since 1882. We extend our sincere sympathy to members of his family, to the firm with which he was so long associated and to his friends.

"X-Rays in Industry"

We have long believed in the great value of photography to industry. It may be a long way from the portrait studio to the modern industrial photographic laboratory; but the distance has been covered, and today we have photography in all its branches firmly intrenched in business. There is hardly a manufacturer of any commodity who does not use photography in some form or other. He may not, at the time, think of photography as having any part in his sales or advertising campaign; but, directly and indirectly, it certainly has. Now the valuable X-ray is serving industry as it has served and is serving medicine. We congratulate the Eastman Kodak Company in announcing, as it were, that photography is really in industry to stay.

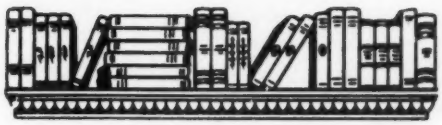
X-ray photography is practically identical in the public mind with certain phases of medical and dental science. But such a valuable tool would not readily confine itself to the needs of the anatomical sciences, in this day of alertness to new uses for existing processes. X-rays are increasingly being used to determine the internal structure of inanimate objects.

Steel castings, aluminum castings, metal radio transmission tubes, a variety of other metal objects, and even trees and telegraph poles, have been subjected to X-ray examination. Such examination has already become standard practice in some factories. The principal work along these lines has been done in the Watertown Arsenal and the Massachusetts Institute of Technology in the United States, and in the Woolwich Arsenal in England.

This information, as part of a brief survey of the theory and use of X-rays in industry, is included in a booklet just prepared by the Eastman Kodak Company entitled "X-rays in Industry". The publication, which will be sent to interested persons, has the intention of suggesting some of the industrial applications of X-rays in inspecting the internal construction of opaque materials.

Karl A. Barleben, A.R.P.S., Visits Wolfeboro

It was a rather busy afternoon and we were trying to get this issue together, so that we might leave for Fort McKinley, Portland, Maine, for military duty without having editorial cares hanging over us. A rather tall young man opened the door and held out his hand. We certainly wished to grasp his hand and to bid him welcome. We could not help returning his pleasant smile—but, blessed if we knew who he was or whether we had ever seen him before! Evidently our predicament was obvious; for with a hearty laugh, he said, "This is Karl Barleben." It seems that he was having a well-earned vacation from his duties at the New York Institute of Photography and was on his way to revisit the White Mountain region, which he had not seen for many years. Well, we had a splendid chat and talked shop as only men in the same profession can. He brought personal greetings from our good friend Herbert C. McKay, our motion-picture editor in New York, and other mutual friends. His visit was all too short. In parting, we asked whether he was making pictures *en route*. He replied that there was a camera in his party but that for two weeks he wanted to think of something else than cameras and photography. We hardly blamed him; but secretly we hope that some member of his party will make a pictorial record of the trip and present Mr. Barleben with a set of prints. When he is back in the rush and roar of the "Big City", a glimpse of the White Hills of New Hampshire will not be unwelcome.



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

Photographic Emulsions, by E. J. Wall, Hon. F.R.P.S., F.C.S. 256 Pages and 42 Figures and Diagrams. Price, cloth, $5.00. Boston: American Photographic Publishing Company.

In his preface to this book, the late Professor Wall states frankly that the making of emulsions, so far as the average amateur or professional photographer is concerned, is neither profitable nor satisfactory technically. Modern machinery and equipment have made possible such excellent plates and films that it would seem almost presumptuous for anyone to think that he could do better with home-made equipment and limited experience. However, as Professor Wall rightly says, there are always those who like to experiment, even though the cost is greater and the results not so good. Therefore, this new book is now available and will doubtless be studied eagerly by those who enjoy the chemical rather than the pictorial part of photography.

There are thirteen chapters which have to do with the workroom, materials used, mixing the emulsion, negative emulsions, special types of emulsions, printing-paper emulsions, mixing different emulsions, shredding and washing the emulsion, filtering and preparing for coating, coating plates, cutfilms and rollfilms, drying, and similar subjects. There is an appendix, with additional formulas and data. The book is bound in red cloth, well printed, and will doubtless fill a real need among experimenters and photographic laboratory workers. The book was delayed in publication, but is now available.

A Guide to the Markets for Photographers. Compiled and edited by A. W. Board. 115 Pages. London: The Fountain Press, Ltd., 14 Clifford's Inn, Fleet Street, London, E.C. 4.

Those of our readers who live in Great Britain will be interested in this book. Furthermore, readers in all parts of the world will find the excellent introductory articles of much practical value. The article on "Camera Journalism" by John Wells is especially helpful. Then we find chapters on "The Copyright of Photographs", "A New Market for Photographs", "How Pictures Are Reproduced", "The Royal Photographic Society", "A Glance at Photography in Other Countries", "Motion-Picture Photography for the Amateur", "Color Transparencies for the Amateur", a review of British and American photographic magazines, and a list of publications in England which buy photographs. Obviously, excepting the general articles, the text matter and prices quoted refer to Great Britain and would be helpful only to those photographers in the United States who were interested in the sale of pictures in England. We commend the publishers for this excellent little book, which ought to receive a hearty welcome from amateur and professional photographers in Great Britain. The volume is well printed and neatly bound with a red cloth cover. We wish it the success it deserves.

THE AMATEUR KINEMATOGRAPHER

HERBERT C. McKAY, F.R.P.S.

Home Recording

THIS will interest only those who own either the Cinétone or the Home-Talkie. To those who own either of these interesting devices, many enjoyable hours are possible by home recording, or rather "matching". The idea of this is to match the film to the record.

A record, such as any standard Victor, Columbia, or other, is selected. Suppose that this is a banjo record. The first step is to obtain a banjo and this record.

The projector and camera are set together. By careful adjustment, it will be possible to set both machines, so that a measured length of film, say twenty-five feet, runs through both in just the same time. Remember in these tests to have film in both camera and projector.

Place the record upon the turntable and play it, while your actor rehearses with the banjo, trying to keep time with the notes of the record. Do not attempt singing or speech the first time or two, because a slight loss of synchronisation will not seriously affect the result in instrumental work. When the action can be performed smoothly, you are ready for the "take".

Set up the talking turntable and the camera, and place the actor, then start both camera and projector at the same instant. Do not stop either instrument until the spring of the camera is about run down. Stop both machines. Wind the camera, and start both machines together, giving the record a slight pull with a finger to overcome starting drag. Four windings should complete the record.

Projection will enable you to determine the starting point which should be marked upon the record. This system of home "recording" will give a great deal of enjoyment to the amateur.

This Question of Sound

THE home-systems of talking motion-pictures are going like the proverbial hot cakes. There is a definite demand for home-talkies, and the equipment now offered to the amateur certainly meets the demand in a satisfactory manner.

However, as is quite natural, the amateur demands an outfit which will enable him to make his own. This is a natural demand; but only those who are familiar with the problems of the great sound-laboratory staffs can appreciate the difficulty in meeting the demand.

The theatrical sound-problem is far from being solved. With equipment running into tens of thousands of dollars, with trained operators, with service men who are graduate engineers, the equipment used gives constant trouble. Let us consider just what the home-recorder problem is.

The recorder must be inexpensive. The sound-camera as used in the studio costs in excess of two thousand dollars, and this does not include any part of the actual sound-equipment. The photographic equipment of the smallest studio represents about ten thousand dollars. The amateur outfit must produce about the same quality at a cost not to exceed five hundred dollars.

The equipment must be rugged and fool-proof. Professional equipment is infinitely delicate, requiring care in handling and the most skilled operation. The amateur equipment must not only be free of unnecessary adjustments, but must have fixed adjustments incapable of alteration and must be rugged enough to withstand the usual vacation-treatment.

Professional equipment weighs so much that it is transported in an automobile truck. The amateur equipment must weigh, complete, less than twenty-five pounds, amplifier included.

The professional microphone of the condenser type costs two hundred and fifty dollars. The amateur type must be within twenty-five dollars.

The professional equipment is built around the sound-recorder, and the reproducer is built as a definite unit of the projector. On the contrary, the amateur equipment must be attachable to any existing camera or projector without factory alteration.

Finally, the professional equipment is unlimited in size, but the amateur equipment must be as portable as the modern portable phonograph.

In short, the amateur equipment must bear the relation to the professional that a fine wrist watch bears to the tower clock; yet the price must be approximately one per cent., and not in excess of five per cent. This is an anomalous situation, yet it is one which will be met, successfully, and no doubt within the next year.

You have demanded sound-recording equipment, and you will get it; but bear in mind these problems, which have been briefly mentioned, and do not think that you have been badly treated if the equipment does not give the fullest perfection—the perfection which even the theatrical equipment has not reached.

Color Photography in Motion

IN technical matters, the amateur is prone to follow the professional. The professional has decreed that motion-pictures shall have sound and color. The wisdom of this decision may or may not be questioned; but it is certain that the demand for both will be heard from the amateur. Sound-reproduction for the amateur has been answered. The recording of sound is as yet out of reach of the amateur; but color is available in Kodacolor and in Vitacolor.

Very beautiful color-effects may be secured, and, if some care is taken in making the film, the most delicate tints will be rendered in their full quality. In both available systems, many amateurs are disappointed, yet the faults lie, not with the systems, but with the photographer.

Color photography is basically the monochrome rendering of specific color-values and the subsequent projection of these records in a manner which translates these monochromatic records in terms of color.

Obviously, color is infinitely delicate in tonal differentiation. We can easily understand that only by securing a corresponding delicacy in recording the

monochrome values can we hope to secure color which is satisfactory. This in turn means that we can no longer depend even upon a fallacious "latitude" of emulsion. It may be definitely stated that it is impossible to secure satisfactory color unless the exposure very closely approximates absolute accuracy. The careless "point and shoot" method will no longer serve.

This statement is not made with the intent to discourage the amateur. No amateur who is worthy of the name should ever be satisfied with the slipshod method of exposure so common now. Correct exposure in any form of photography will give results which are so superior that they fully justify the very little trouble encountered in giving accurate exposures.

In addition to the exposure, the choice of subject has a very definite bearing upon the result. As a rule, wide expanses of landscape are unsatisfactory. There are several reasons. Suppose that we make a photograph of a white card and project this the full size of the screen. With Kodacolor we notice the spectral range due to the filter and in Vitacolor we notice the red-green flicker known as color-bombardment. These are technical peculiarities which do not in any way detract from the beauty of a proper subject, but which are noticeable in some degree in any wide expanse of a single tone, such as the blue of the sky in an open landscape.

It should be remembered that with any equipment there are some things we cannot do. We should not object when we have a new and beautiful process presented to us, if we find that there are limitations. Only by recognising the limitations can we achieve complete satisfaction in our work, within those limitations.

Furthermore, regardless of technical limitations, there is a natural fault in making films of wide expanses in color. In nature we have the color spread over a tremendous expanse. If we reduce the color *area* to the size of a motion-picture screen, we have a harsh color contrast, because by the very perfection of our color processes we do not reduce the color intensity. For this reason, scenes which seem dull and colorless display a truly startling color character, but, as a rule, one not fully satisfactory.

When making color films indoors, remember that the light is not the same as daylight. You must expect a certain degradation of color balance. For example, with incandescent lights, the reds and yellows will be enhanced. A girl who would photograph in daylight with a clear ivory complexion will, when photographed indoors, show a decided pink blush.

In color work you will be forced to learn something of the artist's color perception. Remember that nothing has an absolute color of its own. Let us take a white table cover. This is white. In a room lighted with incandescents it will be yellowish. If the walls be cream color, the cloth will be more yellow. If a lamp with a red shade sets upon the table, the cloth will have a splotch of red-orange. An actress seated at this table will receive a certain degree of color from this cloth and her face will add yellow or red, and so forth. Local color must be recognised, or you will find many weird and mysterious effects in your film.

And then as to lighting, both interior and exterior! For years you have been reading of contrast, three-quarter lighting, separations of planes, roundness, depth, and so forth. Forget it! In color you must work with flat light or be disappointed. Harsh effects will result from shadows which would lend great beauty to black and white. Avoid all black shadow, shun even deep shadow. Work with only the most delicate shadows, for now you have color contrast to supplant tonal contrast. In color work you have at your disposal the contrast which affects the eye, namely color, and you no longer need the artificial contrast of tone. This is a relief, yet you will find it often as difficult to avoid tonal contrast as you once found it difficult to obtain it.

Color presents problems, but not insuperable difficulties. When all is said, the effects which may be secured in color are worth every effort necessary. You remember the delight with which you saw your first motion-picture upon your own screen. You are due to experience a delight as keen when you see your first color film, and when you see your first sound film; but when you see your first film which combines both, then and then only will you know the fullest enjoyment to be secured from motion-pictures.

Some Hints on the Making of Kodacolor Pictures

KODACOLOR time is here. Foliage and flowers are in full bloom, costumes are smart and colorful, and the sun is high and bright.

Thousands of movie-makers will heed the call and make the most of Kodacolor time. To insure that these seekers of color will not forget the few simple rules for making good Kodacolor pictures, we review them briefly here:

To begin with, make sure that the Kodacolor filter is properly inserted in the lens-barrel. Move the diaphragm-pointer to F/1.9 and insert the little key on the filter into the slot in the lens-barrel. Then push the filter all the way down.

With each roll of Kodacolor film a ratio diaphragm is included. This is a small metal ring of special shape that is to be used on the Kodacolor filter with that particular roll of film. If the ratio diaphragm used is not suitable for that roll of film, the proper color balance will not be maintained and the effect on the screen will be unsatisfactory.

When reloading the Ciné-Kodak with Kodacolor film, compare the letter on the ratio diaphragm included with the film with the one on the filter that was used with the last roll of film. If the letter is the same, discard the ratio diaphragm included with the fresh roll of film; if it is different, replace the old ratio diaphragm with the new one.

Be sure that you focus accurately for every scene. If you are not a good judge of distance, it is advisable to use a tape measure for close-ups.

Be very sure, of course, that you have direct, bright sunlight when you attempt Kodacolor pictures with Ciné-Kodak, Model B. Owners of the new Ciné-Kodak, Model BB, will find the half-speed feature of this camera valuable for making Kodacolor pictures when the sun is not bright.

The neutral density filter should be used for scenes where the light is exceptionally bright, such as distant sea or sky scenes, all beach scenes, and distant landscapes and mountains. Full-length or half-length portraits, when the subject is dressed in a white or very light-colored costume, should be made with the neutral density filter.

In the tropics, the neutral density filter should be used on all evenly lighted subjects in sunlight without deep shadows. Whenever deep shadows appear on the subject, and for all close-ups, the neutral density filter must not be used. This is important.

It is advisable to have your Kodacolor film processed as soon after exposure as possible. A list of Kodacolor processing stations may be obtained from your dealer, or any one of the Eastman Kodak stores in the larger cities of the United States and overseas.

The Ciné-Kodak News.

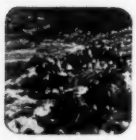
It's Telephoto Time for amateurs...

with the new

Filmo 70-D

Filmo 70 D, in smart Mayfair carrying case of English saddle leather, Ascot Tan or Bombay Brown, $245 and up with one Taylor-Hobson Cooke one-inch F3.5 lens. Other models providing eight different lens combinations. All cases have SESAMEE locks.

Four views photographed at same distance from subject by lenses of four different foci, as indicated.



Regular 1" Lens

2" Lens

4" Telephoto

6" Telephoto

"Distance lends enchantment" in new and exciting ways for the amateur possessing the new 7-speed Filmo 70 D. With its three-lens turret equipped, for instance, with the Taylor-Hobson Cooke 1" F 3.5 for regular work, a 2" F 3.5 for those in-between shots, and either a 4" F 4.5 or 6" F 4.5 or F 5.5 for telephoto work, Filmo 70 D permits the greatest of camera sports—long distance photography.

Each lens in the self-locking turret is ready for instant use at the mere twist of a wrist. The variable viewfinder switches into view the field areas of six different focal length lenses by the mere turn of a knurl. Seven speeds—8, 12, 16, 32, 48, and 64 frames a second—give you the utmost of flexibility. A relative exposure indicator shows exposure settings for each speed as related to normal. A new governor, precise as the movement of a fine watch, insures instant starting and stopping of the film, preventing blank frames.

Operation is as simple as in the famous Filmo 70 A, the original amateur movie camera, or in Filmo 75, slender and aristocratic, for field and sports use.

Ask your dealer to demonstrate Filmo 70 D. See how easily it handles with lenses mounted. Or write for descriptive literature on cameras and lenses.

1" F 3.5 Regular

2" F 3.5

4" F 4.5 Telephoto

6" F 5.5 Telephoto

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